

CUTTING, HEATING & WELDING EQUIPMENT

[®]

SMITH WELDING EQUIPMENT DIVISION of TESCOM CORPORATION

TRADEMARKS

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A-MAL-GAM	FLO-TROL	SMITH'S
AIRLINE	HANDI-HEET	STAR 98
BIG 98	PIPELINER	THE LITTLE TORCH
CAVALIER	SELEC-O-GAS	TUF-TONY
	SILVER STAR	



Our move into the modern SMITH/TESCOM plant and home office stirred memories of earlier growing pains.

Welding was still in its infancy when Mr. Elmer H. Smith began his career as a practicing welder. Welding equipment then in use, mostly of European origin, proved balky and inconvenient to service. Mr. Smith recognized the need for practical "welder-designed" equipment and in 1918 founded Smith Inventions, Incorporated.

Thus the Company originally and to this day has been strongly directed to think of its equipment in terms of efficient working tools. Product performance is measured, not on the basis of how well it works in the laboratory, but on how well it works in the field. Users test new SMITH'S products under actual working conditions in their own plants. Smith's engineers work continuously to make equipment easier, safer, faster and more economical to use — to give constantly improving performance.

This SMITH's philosophy was well accepted and the growing pains started almost immediately. Shortly after incorporation the Company moved to 120 North First Street in Minneapolis. In 1921 a second move was made to 27th Avenue and 4th Street S.E. There, further expansions followed in 1926, World War II, 1954, 1959, 1966 and finally culminated in our move to the new plant at 2600 Niagara Lane North on December 20, 1971.

We at Smith's take pride in our reputation for quality and performance earned in over 50 years of service to the welding industry.

To maintain this reputation we have designed and manufactured highly automated testing machines using the latest technological developments to more thoroughly and accurately test every torch, tip and regulator we manufacture.

We sincerely believe Smith's top quality, safety engineered products provide the best possible working tools to help you do the best possible job.

J. E. Smith
Chairman of the Board

T. G. Johnson
President



BIG 98®

**MEDIUM DUTY
CUTS UP TO 6"
WELDS UP TO 7/8"**

(Capacity with tips supplied in outfit: Cuts up to $\frac{3}{8}$ ", Welds up to $\frac{7}{8}$ ")

The BIG 98 is an outfit in which the craftsman can take pride and the hobbyist confidence. Quality construction and features throughout . . . torch and cutting assembly have corrosion resistant bright-nickel finish, solid brass forgings, strong silver-soldered joints. Exclusive patented Flo-Trol® protects cutting valve seat against burnout. Slip-In tips change quickly in seconds. H1700 series regulators have double filters and sensitive rubber diaphragms.

And if there is ever a need, there is a full line of cutting,

welding, heating and other labor saving special application tips to add to your basic outfit.

AN OUTFIT FOR ANY GAS

The Big 98 can be used with a wide range of fuel gases. To determine the right outfit/fuel gas combination, identify the fuel gas to be used in the chart and order by the corresponding outfit stock number. Cutting, welding/brazing tips and fuel gas regulator will be correct for that fuel gas.

Use with OXYGEN and . . .	Outfit Stock Number	Torch Body	Welding, Brazing Tips	Cutting Assembly	Cutting Tip	Oxygen Regulator	Fuel Gas Regulator	Accessories
Acetylene	BIG 98-300 BIG 98-300L BIG 98-510 BIG 98-510L	MW5	MW203 MW205 MW209	MC509 90°	MC12-0	H1710-540 (CGA540)	H1720-300 (CGA300) H1721-510 (CGA510)	Flint Lighter, Goggles, and 25' Twin Hose.
Flamex®, Propane (1)	MS-40-510 MS-40-510L	MW5	MW403 MW405 MW409	MC509	MC40-0	H1710-540 (CGA540)	H1722-510 (CGA510)	
Propylene, HPG®, APACHI® B-PLUS™ (2)	MS-60-510 MS-60-510L	MW5	MW203 MW205 MW209	MC509	MC60-0	H1710-540 (CGA540)	H1722-510 (CGA510)	
MAPP®, Liquid Air Fuel-Gas	MS-90-510 MS-90-510L	MW5	MW203 MW205 MW209	MC509	MC90-0	H1710-540 (CGA540)	H1722-510 (CGA510)	NOTE: Hose is not included in "L" outfits.

(1) Plus other propane base fuel gases: Acetogen, Chem Gas, Hy-Temp, I.G. Gas, etc.

(2) Plus other propylene base fuel gases: Chem-O-Lene®, Gulf HP Gas, HEF, B.T.U. Liqui-Fuel®, etc.

STAR 98™

**HEAVY DUTY
CUTS UP TO 8"
WELDS OVER 1"**

(Capacity with tips supplied in outfit: Cuts up to $\frac{5}{8}$ ", Welds to $\frac{3}{8}$ ")



LISTED

Smith's STAR 98 is a superior heavy duty combination welding and cutting outfit, designed to handle the really tough jobs . . . built for rugged use. It features Smith's big and tough combination torch . . . the Silver Star. Welding tips have thick copper walls to stand up to hot and heavy use. Thousands of these torches and outfits are on the job all over the world . . . daily proving their rugged dependability in heavy road and building construction or the daily rigors of industrial maintenance. The H1500 series regulators form a perfect team with the Silver Star torch, big brutes with flow to burn.

WIDE SELECTION OF FUEL GASES

The Star 98 can be used with acetylene, MAPP®, Liquid Air Fuel-Gas, and propylene base fuels including: HPG®, APACHI®, B-PLUS™, CHEM-O-LENE®, Gulf HP Gas, B.T.U., LIQUI-FUEL®, HEF and others. To select the right outfit/fuel gas combination, identify the fuel gas and order by the corresponding outfit stock number. Cutting, welding/brazing tips and fuel gas regulator will be correct for use with that fuel gas.

Use with OXYGEN and ...	Oufit Stock Number	Torch Body	Welding, Brazing Tips	Cutting Assembly	Cutting Tip	Oxygen Regulator	Fuel Gas Regulator	Accessories
Acetylene	STAR 98-300 STAR 98-300L STAR 98-510 STAR 98-510L	SW1	SW203 SW205 SW209	SC209 90°	SC12-1	H1510-540 (CGA540)	H1520-300 (CGA300) H1521-510 (CGA510)	Flint Lighter, Goggles, and 25' Twin Hose
Propylene HPG®, APACHI®, B-PLUS™ (1)	SS560-510 SS560-510L	SW1	SW203 SW205 SW209	SC209	SC60-1	H1510-540 (CGA540)	H1522-510 (CGA510)	
MAPP®, Liquid Air Fuel-Gas	SS590-510 SS590-510L	SW1	SW203 SW205 SW209	SC209	SC90-1	H1510-540 (CGA540)	H1522-510 (CGA510)	NOTE: Hose is not included in "L" outfits.

(1) Plus other propylene base fuel gases: Chem-O-Lene®, Gulf HP Gas, HEF®, B.T.U.®, Liqui-Fuel®, etc.



LISTED

SILVER STAR[®] SPECIAL

HEAVY DUTY CUTS UP TO 8" WELDS OVER 1"

(Capacity with tips supplied in outfit: Cuts up to $\frac{5}{8}$ ", Welds up to $\frac{3}{8}$ ")

The SILVER STAR SPECIAL offers heavy duty performance and a dollars-saving price tag. The "Special" features Smith's general purpose H1700 series regulators, otherwise the components are identical to the STAR 98 outfit. Ideal for a wide range of industrial, construction, maintenance and farm applications.

Smith's welding and one-piece cutting tips are swaged from 99.9% pure copper . . . they operate longer and cooler, are more resistant to reflected heat and backfire than leaded-copper tips.

WIDE SELECTION OF FUEL GASES

The SILVER STAR SPECIAL can be used with acetylene, MAPP®, Liquid Air Fuel-Gas, and propylene base fuels including: HPG®, APACHI®, B-PLUS™, CHEM-O-LENE®, Gulf HP Gas, B.T.U.®, Liqui-Fuel®, HEF® and others. To select the right outfit/fuel gas combination, identify the fuel gas and order by the corresponding outfit stock number in the selection chart on this page. Cutting, welding/brazing tips and fuel gas regulator will be correct for use with that fuel gas.

Use with OXYGEN and . . .	Outfit Stock Number	Torch Body	Welding, Brazing Tips	Cutting Assembly	Cutting Tip	Oxygen Regulator	Fuel Gas Regulator	Accessories
Acetylene	SS400-300 SS400-300L SS400-510 SS400-510L	SW1	SW203 SW205 SW209	SC209 90°	SC12-1	H1710-540 (CGA540)	H1720-300 (CGA300) H1721-510 (CGA510)	Flint Lighter, Goggles, and 25' Twin Hose.
Propylene, HPG®, APACHI®, B-PLUS™ (1)	SS460-510 SS460-510L	SW1	SW203 SW205 SW209	SC209	SC60-1	H1710-540 (CGA540)	H1722-510 (CGA510)	
MAPP®, Liquid Air Fuel-Gas	SS490-510 SS490-510L	SW1	SW203 SW205 SW209	SC209	SC90-1	H1710-540 (CGA540)	H1722-510 (CGA510)	NOTE: Hose is not included in "L" outfits.

(1) Plus other propylene base fuel gases: Chem-O-Lene®, Gulf HP Gas, HEF®, B.T.U.®, Liqui-Fuel®, etc.

CAVALIER™

**LIGHT DUTY
CUTS UP TO 3"
WELDS UP TO 1/2"**

(Capacity with tips supplied in outfit: Cuts up to $\frac{3}{8}$ ", Welds up to $\frac{1}{8}$ ")



This light duty outfit is perfect for jobs requiring a sensitive touch. The torch body and cutting assembly are compact and light weight, easier to use in tight, confined areas. The CAVALIER is just right for repair shops, bodyshops, garages, car clubs and customizers, home workshops . . . wherever there's a need for quality welding and cutting.

Torch body and cutting assembly have same quality features of larger Smith's torches: wear resistant nickel finish, solid silver-soldered construction, strong brass forgings, Slip-In tips, Flo-Trol®, and "Soft-Flame" welding/brazing tips for improved "puddle" control. Accurate, dependable gas control is provided by the H1700 Series regulators.

USE WITH MANY FUEL GASES

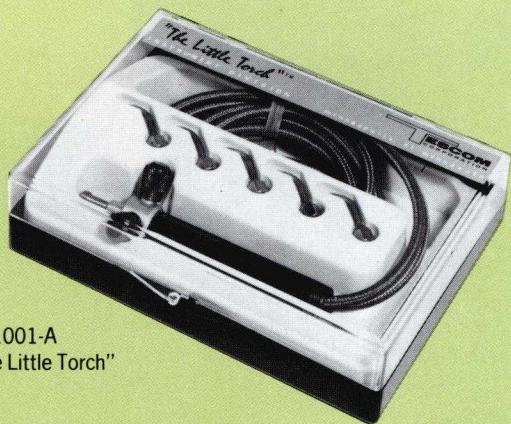
The versatile CAVALIER may be used with acetylene, MAPP®, Liquid Air Fuel-Gas, and propylene base fuels including: HPG®, APACHI®, B-PLUS™, CHEM-O-LENE®, Gulf HP Gas, B.T.U.®, LIQUI-FUEL®, HEF® and others. To select the correct outfit/fuel gas combination, identify the fuel gas and order by the corresponding outfit stock number in the selection chart on this page. The cutting, welding/brazing tips and fuel gas regulator will be correct for use with that fuel gas.

Use with OXYGEN and . . .	Outfit Stock Number	Torch Body	Welding, Brazing Tips	Cutting Assembly	Cutting Tip	Oxygen Regulator	Fuel Gas Regulator	Accessories
Acetylene	CAV-10-300 CAV-10-300L CAV-10-510 CAV-10-510L	AW1	AW203 AW205	AC309 90°	MC12-0	H1710-540-T (CGA540)	H1720-300-T (CGA300) H1721-510-T (CGA510)	Flint Lighter, Goggles, and 12½' Twin Hose.
Propylene, HPG®, APACHI®, B-PLUS™ (1)	AS-60-510 AS-60-510L	AW1	AW203 AW205	AC309	MC60-0	H1710-540-T (CGA540)	H1722-510-T (CGA510)	
MAPP®, Liquid Air Fuel-Gas	AS-90-510 AS-90-510L	AW1	AW203 AW205	AC309	MC90-0	H1710-540-T (CGA540)	H1722-510-T (CGA510)	NOTE: Hose is not included in "L" outfits.

(1) Plus other propylene base fuel gases: Chem-O-Lene®, Gulf HP Gas, HEF®, B.T.U.®, Liqui-Fuel®, etc.

"The Little Torch"™**FOR MINIATURE WELDING**

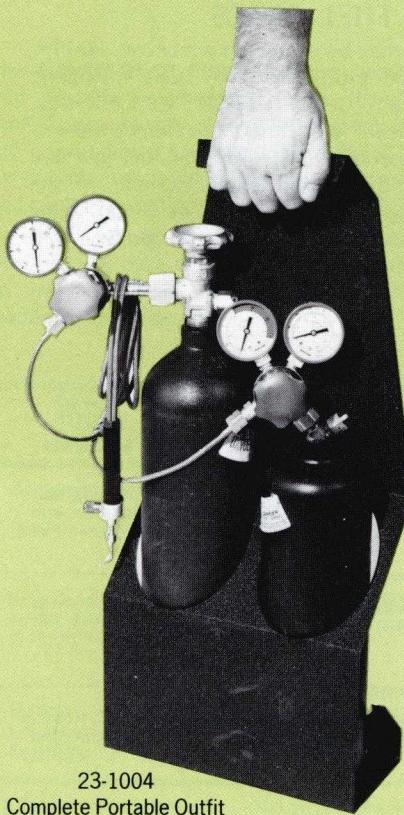
WELDS . . . BRAZES . . . SOLDER . . . HEATS



23-1001-A
"The Little Torch"
Kit



23-1003
Torch Kit with Regulators



23-1004
Complete Portable Outfit

"The Little Torch" is a true professional's torch. It welds with incomparable precision. Joins an almost unlimited variety of materials: steel, aluminum, gold, platinum, plastics, ceramics and glass, from .001" up to 16 gauge steel. The optional size six tip extends the range up to $\frac{3}{32}$ ". The perfect solution to modern micro-joining problems in every field. Ideal for laboratories, research and development, electronic production and repair, dental labs, jewelry making, hobby crafts and metal sculpture.

MANY FUEL GASES

"The Little Torch" can use any of the commonly available industrial fuel gases — acetylene, hydrogen, MAPP®, Flamex®, HPG® and other propane or propylene base fuels.

Applications are limited only by the user's imagination. For small, even microscopic work, in hard to reach places and tiny spaces . . . "The Little Torch" provides versatility, maneuverability and a needle point flame for precision welding, brazing, soldering or heating.

23-1001-A "The Little Torch" Kit

The basic torch kit is ideal for use in the fully equipped shop or lab. Includes aluminum alloy torch, five copper tips (sizes 1-5), two six-foot lengths of durable plastic hose with protective woven cover, connections to fit standard regulators and an operation manual. Torch valves and hoses are color-coded for convenience and safety.

23-1003 Torch Kit with Regulators

Includes basic kit, 23-1001-A, plus two regulators designed specifically for precision miniature welding. Oxygen regulator H1910-540 fits standard CGA540 industrial oxygen cylinder valves. Fuel gas regulators are available for use with specific fuel gases and cylinder valves . . . select correct outfit from those listed immediately below.

Outfit Number Description

- | | |
|-----------|--|
| 23-1003 | Kit with regulators for oxygen and acetylene.
Fits CGA200 acetylene valve. |
| 23-1003-B | Kit with regulators for oxygen and acetylene.
Fits CGA520 acetylene valve. |
| 23-1003-C | Kit with regulators for oxygen and acetylene.
Fits CGA300 acetylene valve. |
| 23-1003-H | Kit with regulators for oxygen and hydrogen.
Fits CGA350 hydrogen valve. |
| 23-1003-P | Kit with regulators for oxygen and many popular fuel gases, acetylene, MAPP®, HPG® and gases with a propane or propylene base.
Fits CGA510 fuel gas cylinder valve. |

23-1004 Miniature Welding Outfit

Complete outfit is easily carried, weighs only thirty pounds. The 23-1004 includes torch, five tips, two six-foot hoses, regulators for oxygen and acetylene, one "D" size oxygen cylinder and one "MC" acetylene cylinder, plus convenient metal carrying case. Each cylinder contains approximately 10 cubic feet of gas and is refillable.

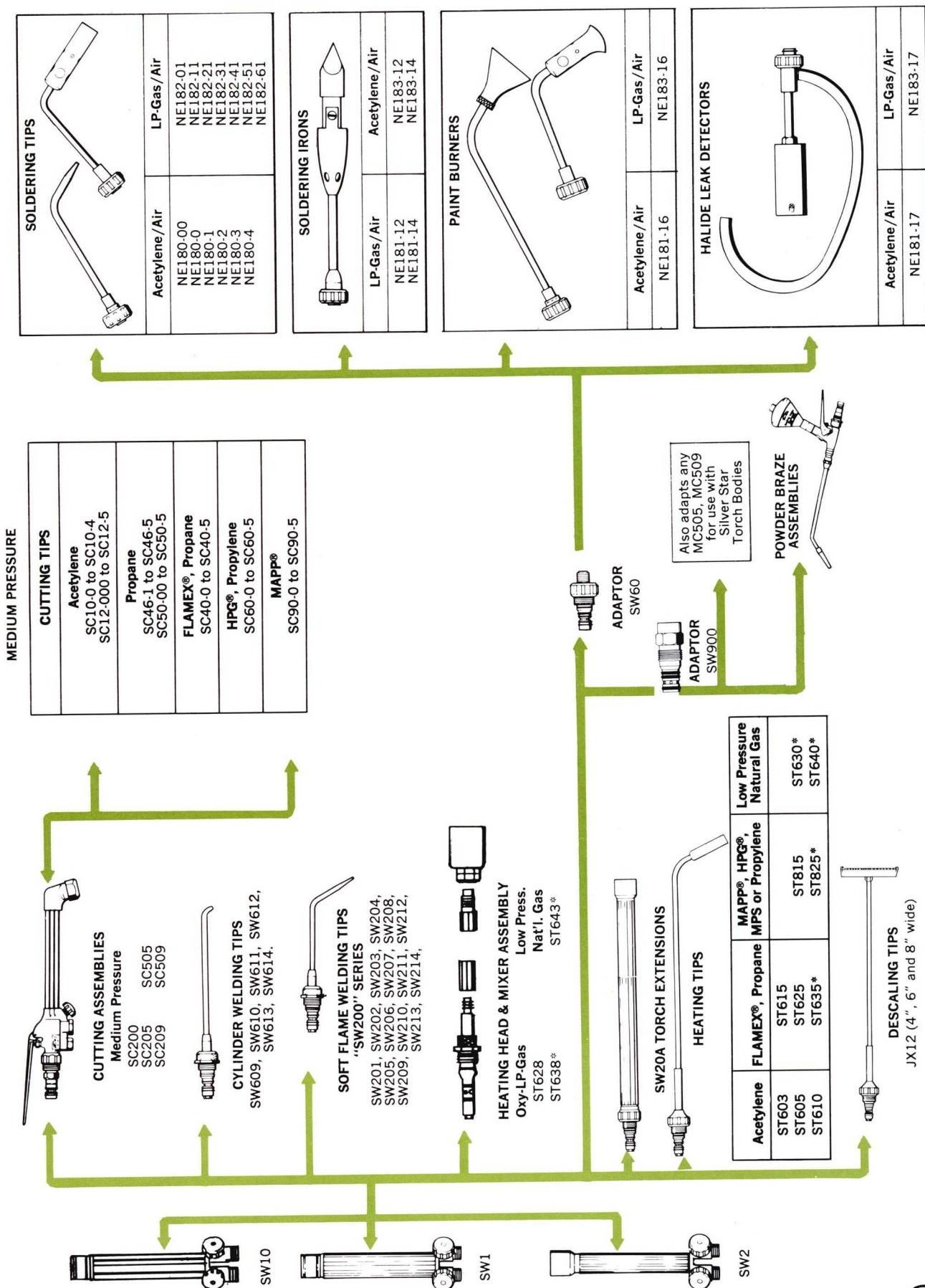
23-1004-H Oxy-Hydrogen Miniature Welding Outfit.

Same as the 23-1004 except with H1943-350 hydrogen regulator and hydrogen cylinder.

SILVER STAR® TORCH UTILITY GUIDE CHART



Your "Road Map" to greater torch usefulness. See individual sections for detailed information.

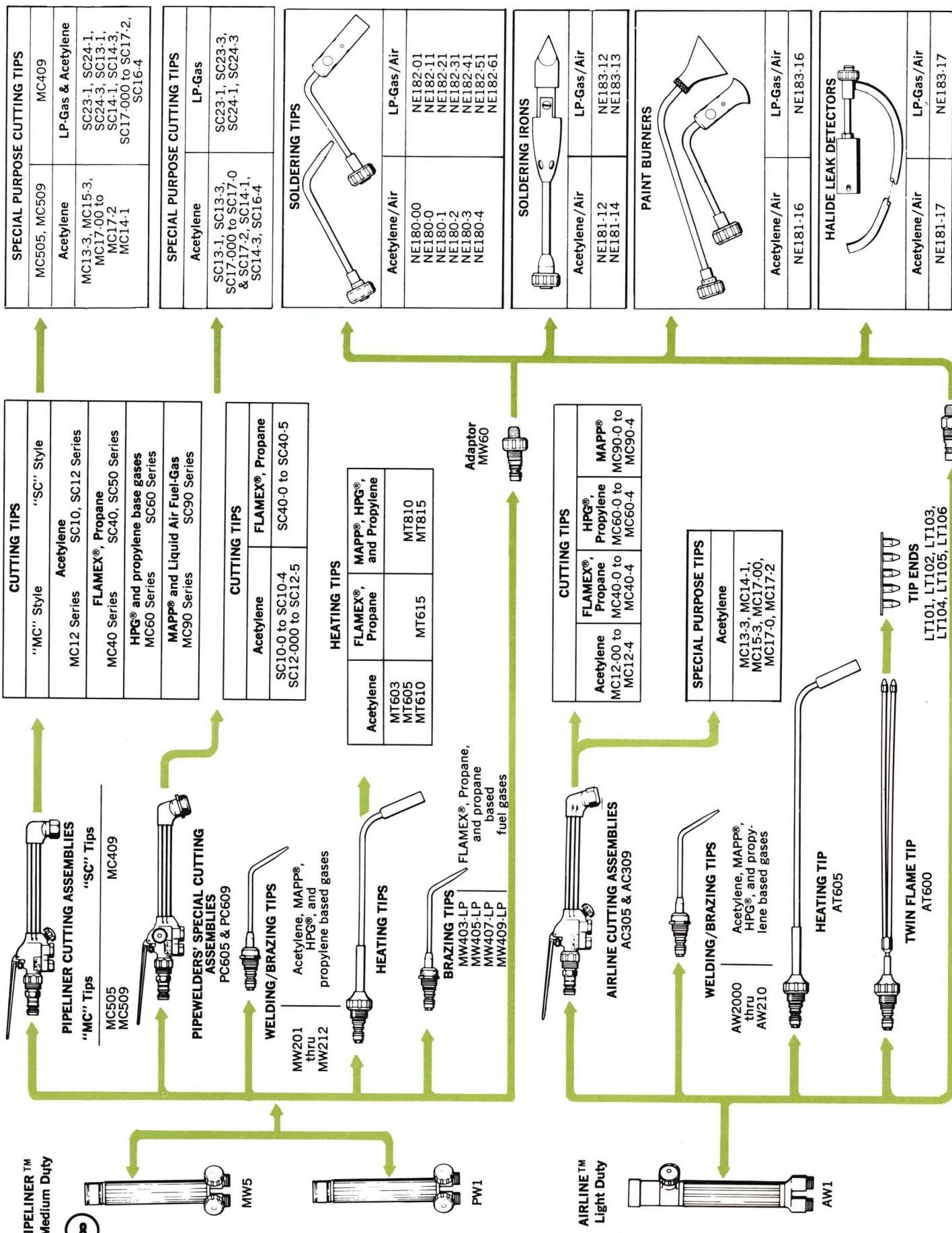


MAPP is a registered trademark of Dow Chemical Company.

*For use in SW10 Torch Body ONLY.



PIPLINER™ and AIRLINE™ TORCH UTILITY GUIDE CHART



Smith's torch bodies are available in three capacities to match job requirements — heavy duty SILVER STAR, medium duty PIPELINER and light duty AIRLINE . . . with choice of body lengths, handle diameter and valve location to match most individual preferences. Torches have silver brazed joints to provide overall strength and rigidity for safe performance under rugged conditions. Torch bodies are individually tested to maintain Smith's reputation for quality and dependable performance.

① UNIVERSAL HANDLE

Right or left handed . . . normal or overhead welding . . . whatever the position, Smith's tips and cutting assemblies can be positioned anywhere in a full 360° circle, even with the torch lit. A needed convenience made possible by Smith's slip-in design and gas tight "O" ring seals. Hand tighten . . . no wrench needed.

② IN-TIP MIX

SILVER STAR, PIPELINER and AIRLINE torch bodies feature in-tip mix of all tips for operator safety and added protection against flashback.

③ DOUBLE-SAFE JOINTS

Internal joints are double strong . . . screwed AND soldered together to provide maximum safety, an added safeguard against internal leaks.

④ DOUBLE-TUBE HANDLE

Extra safety feature keeps gases separate until mixed in the tip . . . welding or cutting. Gives the operator added protection against flashback.

⑤ SOLID BRASS BUTT

Machined from solid brass forging for maximum service, strength and resistance to corrosion.

⑥ BALL STYLE VALVE

Ball style valves on SILVER STAR and PIPELINER torch bodies feature corrosion resistant stainless steel balls for positive shut-off and smooth adjustment. Long valve thread engagement in 5-layer Teflon® packing prevents flame fluctuation and stops valve wobble.

⑦ POSITIVE FLAME ADJUSTMENT

Large fluted knob turns easily even with thick welders gloves. Provides accurate control of oxygen and fuel gases. "Drag" can be adjusted to individual operators preference. Smith's slip-in "O" ring design allows convenient positioning of torch valves for right or left handed operator.

⑧ NICKLE FINISH

Wear resistant nickle finish reflects radiant heat and resists corrosion.

⑨ SURE-GRIP HANDLE

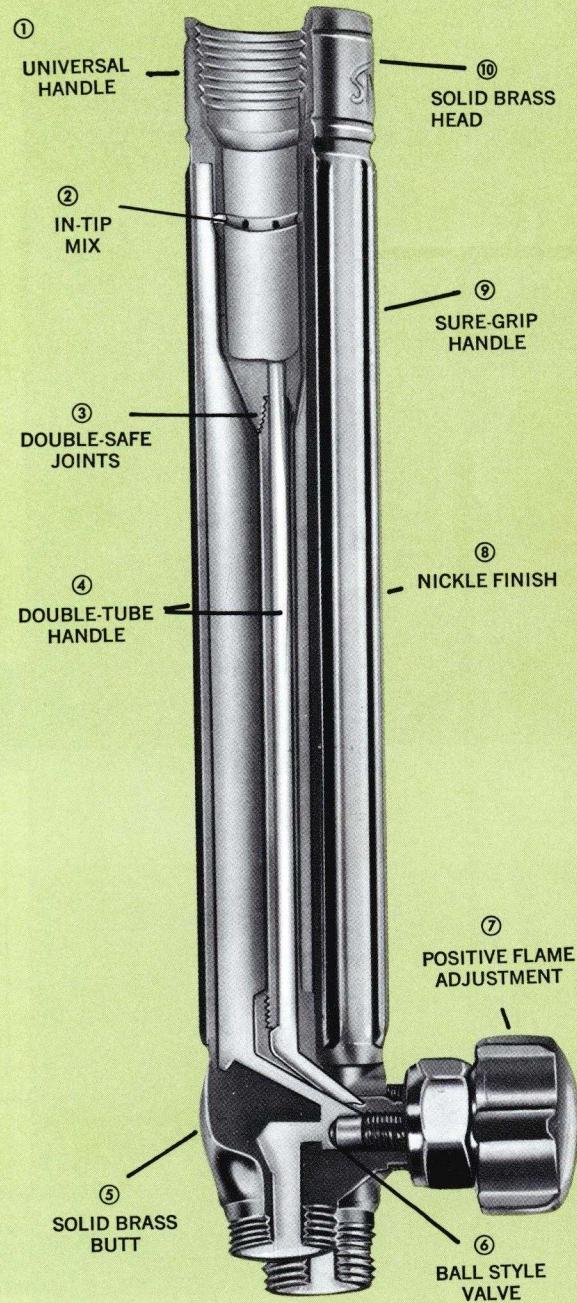
Extruded brass handle is engineered for perfect balance . . . fits the hand comfortably . . . fluted handle surface for firm, steady grip.

⑩ SOLID BRASS HEAD

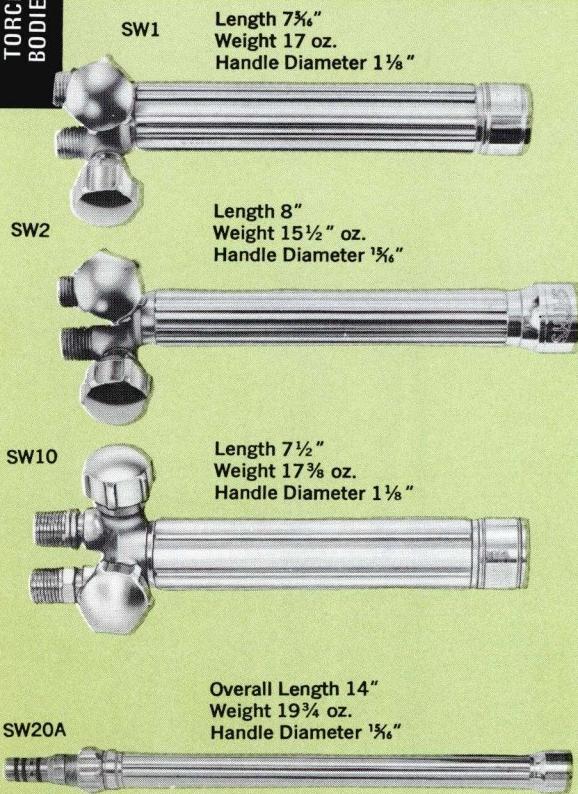
Machined solid brass head gives maximum durability and resistance to corrosion . . . internal threads protected from damage. Extra coarse threads provide strength and hold tips and cutting assembly securely . . . hand tight, no wrench needed.



Teflon is a registered trademark of Du Pont.



SILVER STAR® TORCH BODIES—Heavy Duty



SW1 Silver Star Body

Rugged torch body for general purpose welding, heating, brazing and cutting. Heavy duty silver brazed constructions, pressure forged butt, solid brass head, and fluted "Easy Grip" handle. Needle valves are ball type for easy, fine adjustment; eliminates uneven valve wear to assure safer, longer trouble-free operation. Has 5 layer TEFILON® packing for leak proof flow control. Inlet connections fit "B" size hose nuts, 1/8"-18 right or left hand.

SW2 Silver Star Body

A slimmer, longer model with the same features as the SW1.

USED WITH: Cutting Assemblies — SC200, SC205, SC209, SC505, SC509. Welding Tips — SW200 Series, SW600 Series. Heating Tips — ST603, ST605, ST610, ST615, ST625, ST628, ST716, ST630, ST815, ST825. Special Tips — JX16, JX12 Series. Powder Braze Assemblies — MW900D, MW900 Series with SW900 adapter.

SW10 High Volume Torch Body

Delivers 50% higher flow than Smith's standard SW1, yet is less than 1/2 ounce heavier. Handles every job from heavy heating to light welding with easy handling and top efficiency. Has all features of SW1 plus replaceable hose connections.

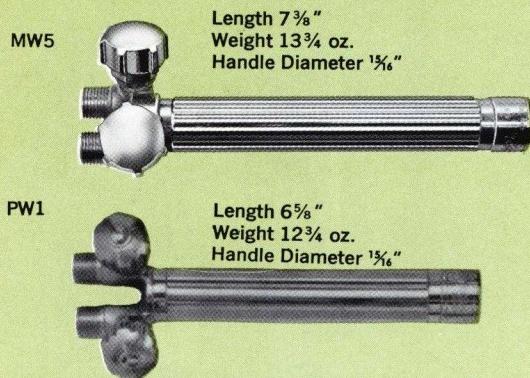
USED WITH: All equipment listed for SW1 & SW2 PLUS the high volume heating tips — ST635, ST638, ST640 and ST643.

SW20A Torch Extension

Gets operator further away from the heat, especially when torch is used with heavy heating tips. Extension is 12" long. Couple extensions for greater length.

USED WITH: SW1, SW2, SW10 torch bodies and all equipment listed for them.

PIPELINER™ TORCH BODIES—Medium Duty



MW5 Pipeliner Torch Body

Easy handling, high quality mid-size torch body. Handles all but the highest volume heating and heaviest welding needs. Features rugged silver brazed construction, forged brass butt and precision machined brass head. Ball type needle valves eliminate uneven valve wear and provide easy flame adjustment. Inlet connections, 1/8"-18 right or left hand, fit "B" size hose nuts.

PW1 Pipewelders' Special Body

Designed to meet the requirements of Pipewelders. Same features as MW5 but 3/4" shorter.

USED WITH: Cutting Assemblies — MC505, MC509, MC409, PC605, PC609. Welding Tips — MW200 and MW400 Series. Heating Tips — MT603, MT605, MT610, MT815. Accessory Tips — MT400, MT410, MT600. Adapter No. MW615. Powder Braze Assemblies — MW900 and MW900D Series.

AIRLINE™ TORCH BODY—Light Duty



AW1 Airline Torch Body

Specially designed to handle light duty welding and fabricating. Light weight and compact size provide easy handling, even in confined areas. Needle valves located at front end for easy one-hand flame adjustment. Inlet connections 3/8"-24 right and left hand, fit "A" size hose nuts.

USED WITH: Cutting Assemblies — AC305, AC309. Welding Tips — AW200 Series. Heating Tip — AT605. Twin Flame Tip — AT600. Handi-Heet Adapter — AW60.

AW6 Lite-O-Matic Body — Light Duty

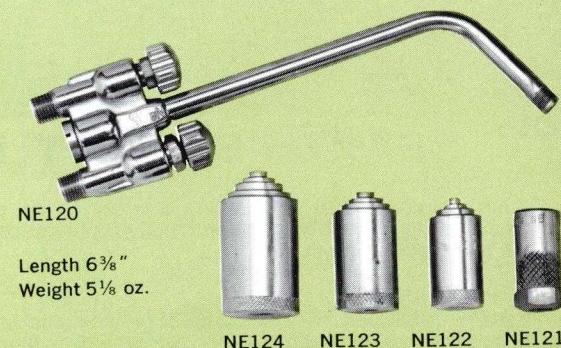
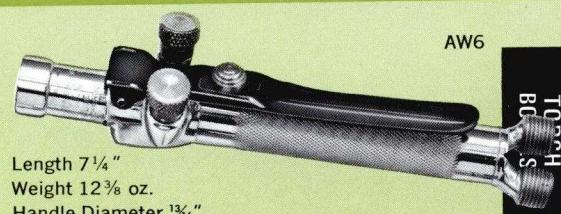
Torch is always ready . . . maintains a small pilot flame at end of tip. Press the lever for full welding flame — release lever and it returns to small pilot flame. Saves operator time, speeds welding operation. Lever can be locked in place for longer welding periods. Inlet connections fit "B" size nuts, $\frac{3}{16}$ "-18 right and left hand.

USED WITH: Welding tips AW200 Series

NE120 Gas and Compressed Air Torch

Small, light weight torch for use by radiator shops, dental laboratories, jewelers, sheet metal shops, electronic equipment manufacturers. Uses compressed air at 10 to 20 p.s.i. with fuel gas gases such as acetylene, hydrogen, manufactured or natural gas and propane. Flames can be adjusted to fine point or brush type. Gas inlets fit "A" size hose connection nuts, $\frac{3}{8}$ "-24 right and left hand. Uses tips listed below.

Tip No.	Length	Weight	Burns Fuel Gas	Fuel PSI
NE121	1 $\frac{1}{32}$ "	1 oz.	Acetylene or Hydrogen	10
NE122	1 $\frac{1}{32}$ "	2 oz.	Natural Gas, Mfg'd. Gas or Propane	5-10
NE123	1 $\frac{1}{2}$ "	3 oz.		
NE124	1 $\frac{1}{16}$ "	4 oz.		



NE140 and NE150 Gas and Oxygen Torches

These small, light weight torches are identical except for the fuel gas nozzles.
*NE140 burns acetylene or hydrogen at minimum pressure of 1 psi and oxygen at 1 to 10 psi. For lead burning or light brazing and welding.

NE141 TORCH SET: Consists of NE140 torch, one each tip ends LT101 through LT106, plus LT109 tip holder. Weight 8 oz.

LT110 TIP SET: LT109 holder plus 5 tip ends; LT101, LT102, LT104, LT105 and LT106.

NE150 torch burns manufactured or natural gas or propane at pressure of at least 4 oz. to 10 PSI with oxygen at 20 PSI. For battery work, silver brazing and soft soldering.

NE157 TORCH SET. Consists of NE150 torch, one each tip ends NE151 through NE156 plus LT109 tip end holder. Weight 8 oz.

NE50 TIP SET: LT109 tip end holder plus 5 tip ends; NE151, NE152, NE154, NE155 and NE156.

LT109 TIP END HOLDER. Fits LT101 to LT106 tip ends or NE151 to NE156 tip ends.

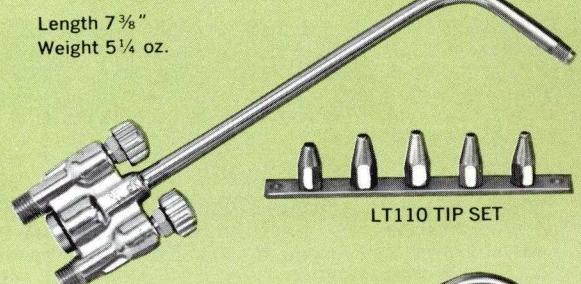
TIP ENDS FOR NE140

Stock No.	Drill Size
LT101	#74
LT102	#70
LT103	#63
LT104	#56
LT105	#54
LT106	#52

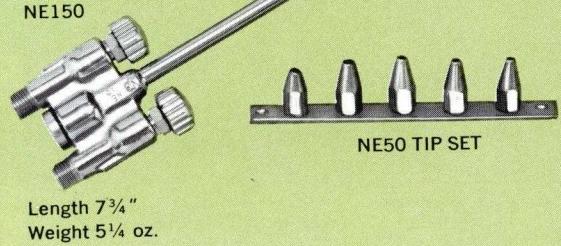
TIP ENDS FOR NE150

Stock No.	Drill Size
NE151	#50
NE152	#48
NE153	#44
NE154	#36
NE155	#30
NE156	$\frac{1}{8}$ "

NE140



NE150

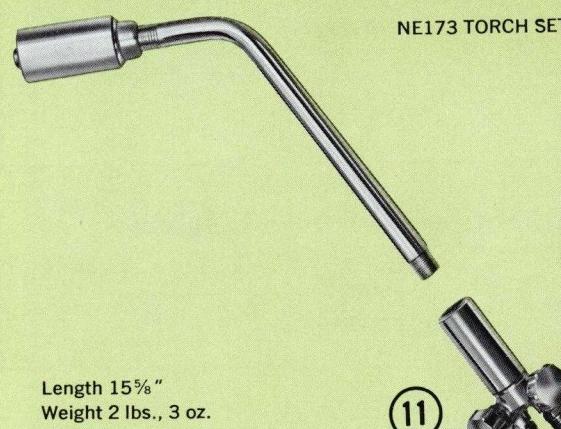


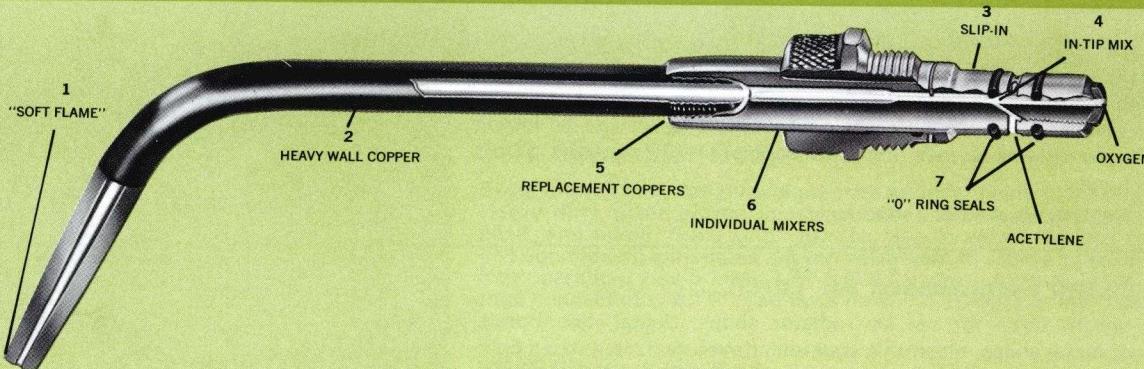
NE175 Gas-Compressed Air Heating Torch

Produces concentrated flame not normally possible with low cost natural gas. Ideal for a wide range of heating applications including die casting. Produces temperatures of 3400°F. with natural gas, 3500°F. with propane. Operates on gas pressures of 6" water pressure up to 10 psi and 10 to 100 psi compressed air. For maximum heat output a minimum of 30 psi air is required. Outlet connections fit "B" size hose connection nuts, $\frac{3}{16}$ "-18 right and left hand.

Torch Set	Consists of:		
	Torch Body	Tip Head	Gooseneck
NE173	NE175	NE171 86,000 BTU's/HR	NE171-1
NE174	NE175	NE172 147,000 BTU's/HR	NE172-1

NE173 TORCH SET





SMITH'S "SOFT FLAME" — makes welding easier

Smith's welding tips are quality engineered to provide easy handling, high performance and added protection in welding and brazing operations.

1 "SOFT FLAME"

Smith's "Soft-Flame" welding tips provide concentrated heat for better "puddle" control — the turbulent free flame eliminates puddle chasing. Provides deep, even penetration without burning through base metal for strong, dependable welds. Molten metal is protected from atmospheric oxidation by smooth, even flame envelope.

2 HEAVY WALL COPPER

High purity (99.9%), extra-thick wall copper tips give extra-handling comfort. The heavy wall copper gives greater resistance to reflected heat, permits cooler operation, dissipates more heat than thin wall copper. Smith's tips last longer, tip ends can absorb more heat, long straightaway permits refacing of tip after excessive wear or abuse.

3 SLIP-IN

"Slip-In" tips can be changed in just seconds. Hand tighten . . . no wrench needed. "O" rings provide gas tight seal. Keep gases separate until they mix in the tip. Extra thick tip nut threads hold tip securely in torch.

4 IN-TIP MIX

Extra safe in-tip mix keeps acetylene and oxygen separate until mixed in the tip . . . provides greater resistance to flashback.

5 REPLACEMENT COPPERS

Original coppers can be replaced for added economy.

6 INDIVIDUAL MIXERS

Individual mixers provide engineered balance of nozzle and tip orifices and gas pressures for best operation and resistance to flashback. It is the complete mixing and precise balancing of gas velocities that greatly increases resistance to flashbacks even at short flame settings.

7 "O" RING SEALS

"O" rings provide gas tight seals . . . permit 360° turning radius for convenient positioning of tip . . . even when lit. "O" rings keep gases separate until they mix in the tip.

100% TESTING

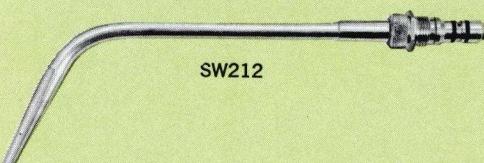
Each tip is individually tested on Smith designed automatic testing machines and must pass stringent requirements for flame characteristics, gas flow and resistance to flashback.

SILVER STAR WELDING TIPS—Heavy Duty

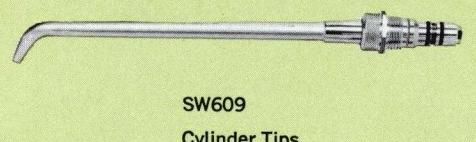
SW209



SW212



SW609



Cylinder Tips

Tip Number	Welding Range
SW201	$\frac{1}{32}$ "
SW202	$\frac{1}{16}$ "
SW203	to
SW204	$\frac{1}{32}$ "
SW205	$\frac{1}{8}$ "
SW206	$\frac{5}{32}$ "
SW207	$\frac{3}{16}$ "
SW208	$\frac{1}{4}$ "
SW209	$\frac{5}{32}$ "
SW210	$\frac{1}{2}$ "
SW211	$\frac{5}{16}$ "
SW212	$\frac{7}{32}$ "
SW213	1" and Over
SW214	1" and Over

SW200 Series

(Oxy-Acetylene)

For general and heavy welding and brazing. Swaged construction provides greater heat concentration for improved "puddle" control. Tips bent to 63½° angle. Replaceable "O" rings: LW15 (pkg. of 6).

USE IN: Torch Bodies—SW1, SW2, SW10.
Torch Extension—SW20

FUEL GASES. These tips may also be used for brazing with MAPP®, Liquid Air Fuel-Gas, or brazing with propylene base fuel gases: HPG®, APACHI®, B-PLUS™, and others. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene. See the Fuel Gas/Tip Selection Chart on page 13.

SW609	$\frac{3}{8}$ "
SW610	$\frac{1}{2}$ "
SW611	$\frac{5}{8}$ "
SW612	$\frac{7}{8}$ "
SW613	1" and Over
SW614	1" and Over

SW600 Series

(Oxy-Acetylene)

For cylinder head welding and other hard to reach areas. Tips have 70° angle bend. Replaceable "O" rings: LW15 (pkg. of 6).

USE IN: Torch Bodies—SW1, SW2, SW10.
Torch Extension—SW20.

PIPELINER™ WELDING TIPS—Medium Duty

MW200 Series

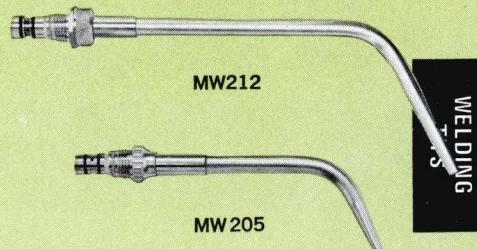
(Oxy-acetylene)

For general purpose medium duty welding. Features Smith's "Soft-Flame" for easier puddle control and better penetration. Tips bent to $63\frac{1}{2}$ ° angle. Replaceable "O" rings: MW15 (pkg. of 6).

USE IN: Torch Bodies—MW5 and PW1. Also in SW1, SW2, SW10 torch bodies with SW900 adaptor.

FUEL GASES. These tips may also be used for brazing with MAPP®, Liquid Air Fuel-Gas, or brazing with propylene base fuel gases: HPG®, APACHI®, B-PLUS™, and others. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene. See the Fuel Gas/Tip Selection Chart on page 13.

Tip Number	Welding Range
MW201	$\frac{1}{2}$ "
MW202	$\frac{1}{8}$ " to $\frac{1}{2}$ "
MW203	$\frac{1}{16}$ " to $\frac{1}{2}$ "
MW204	$\frac{1}{16}$ " to $\frac{1}{2}$ "
MW205	$\frac{1}{8}$ "
MW206	$\frac{1}{16}$ "
MW207	$\frac{1}{16}$ "
MW208	$\frac{1}{4}$ "
MW209	$\frac{3}{8}$ "
MW210	$\frac{1}{2}$ "
MW211	$\frac{5}{8}$ "
MW212	$\frac{7}{8}$ "



WELDING

MW400 Series

(Oxy-FLAMEX®, Propane)

General purpose medium duty brazing tips designed specifically for use with FLAMEX®, propane or propane base fuel gases, with oxygen. Tips bent to $63\frac{1}{2}$ ° angle. Replaceable "O" rings: MW15 (pkg. of 6).

USE IN: Torch Bodies—MW5 and PW1. Also in SW1, SW2, SW10 torch bodies with SW900 adaptor.

MW403-LP
Up to $\frac{1}{16}$ "
MW405-LP
 $\frac{1}{16}$ " - $\frac{1}{8}$ "
MW407-LP
 $\frac{1}{16}$ " - $\frac{1}{4}$ "
MW409-LP
 $\frac{1}{4}$ " - $\frac{7}{8}$ "



FLAMEX®, Propane Blazing Tip.

AIRLINE™ WELDING TIPS—Light Duty

AW200 Series

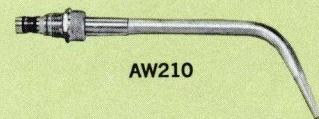
(Oxy-acetylene)

General purpose light duty welding tips featuring Smith's "Soft-Flame" characteristics. Same rugged constructions as in other Smith's tips but shorter, lighter and easier to handle. Replaceable "O" rings: AW15 (pkg. of 6).

USE IN: Torch Bodies—AW1 and AW6

FUEL GASES. These tips may also be used for brazing with MAPP®, Liquid Air Fuel-Gas, or brazing with propylene base fuel gases: HPG®, APACHI®, B-PLUS™, and others. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene. See the Fuel Gas/Tip Selection Chart on page 13.

AW2000	Up to $\frac{1}{2}$ "
AW200	
AW20	
AW201	
AW202	Up to $\frac{1}{2}$ "
AW203	
AW204	
AW205	$\frac{1}{8}$ "
AW206	$\frac{1}{16}$ "
AW207	$\frac{1}{16}$ "
AW208	$\frac{1}{4}$ "
AW209	$\frac{3}{8}$ "
AW210	$\frac{1}{2}$ "



AW210



AW205

FUEL GAS/TIP SELECTION CHART

TORCH BODIES			METAL THICKNESS	ACETYLENE			MAPP®, HPG®, Propylene and propylene bases gases ⁽¹⁾			FLAMEX® Propane ⁽¹⁾ MW400
Silver Star	Pipeliner	Airline		AW200	MW200	SW200	AW200	MW200	SW200	
SW1	MW5	AW1	Very Light Metal Up To $1/32$ "	AW2000			AW20			
SW2	PW1	AW6		AW200			AW201		MW201	SW201
SW10				AW20			AW202		MW202	SW202
				AW201	MW201	SW201	AW203		MW203	SW203
			1/16" to $3/32$ "	AW202	MW202	SW202	AW204	MW204	SW204	MW403 LP
				AW203	MW203	SW203	AW205	MW205	SW205	
				AW204	MW204	SW204	AW206	MW206	SW206	MW405 LP
			$1/8$ "	AW205	MW205	SW205	AW207	MW207	SW207	
			5/32"	AW206	MW206	SW206	AW208	MW208	SW208	MW407 LP
			3/16"	AW207	MW207	SW207	AW209	MW209	SW209	
			$1/4$ "	AW208	MW208	SW208	AW210	MW210	SW210	MW409 LP
			$3/8$ "	AW209	MW209	SW209			MW211	
			$1/2$ "	AW210	MW210	SW210			MW212	
			$5/16$ "		MW211	SW211				SW213
			$7/8$ "		MW212	SW212				SW214
			1 " & Over			SW213				
						SW214				



ACETYLENE HEATING TIPS NWSA 220

Used in Welding Torch Bodies

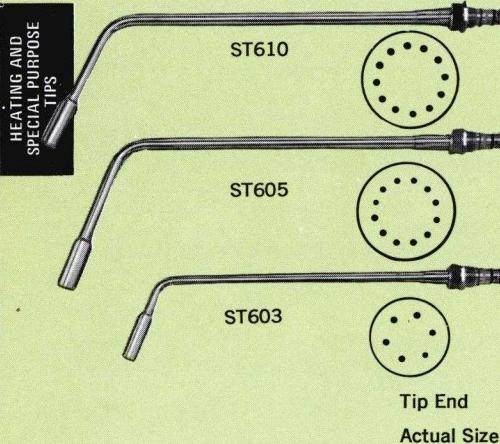
Smith's multi-flame and single flame heating tips are designed to provide large volumes of heat for applications such as: bending, straightening, pre-heating, brazing, shrinking, forming and many others.

Heating tips provide significant cost savings in many applications. By providing great amounts of quick, concentrated

heat, heating tips do the job faster and cut labor time to a minimum.

For proper performance use the recommended pressures for each tip and with an adequate gas supply. Manifolding of cylinders is essential for safe and efficient operation of large size heating tips.

SILVER STAR® HEATING TIPS—Heavy Duty



Acetylene multi-flame heating tips are designed to provide large volumes of concentrated heat for bending, straightening, shrinking, forming and many other applications. Smaller sizes are often used for bronze welding or for applying hard facing metal to large areas.

USED IN: Torch Bodies—SW1, SW2, SW10. Torch Extension—SW20A

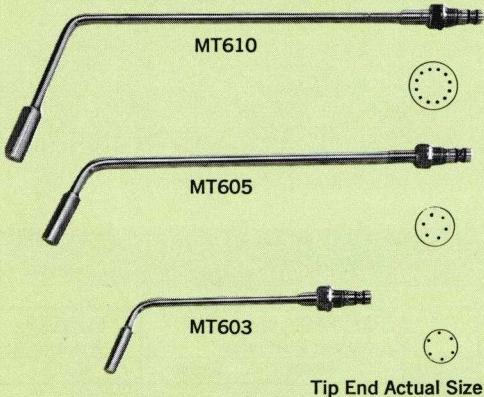
Stock No.	No. of Flames	Drill Size	Acetylene PSI	Oxygen PSI	Acet. CFH	Oxygen CFH	Net B.T.U. Output
ST603	6	#56	4	4	50	55	71,650
ST605	12	#57	6	7	87	96	124,671
ST610	12	#54	10	10	136	150	194,888

ST603: Length 15 $\frac{3}{4}$ ", Net Weight 15 $\frac{3}{4}$ oz. Manifold 2 acetylene cylinders.

ST605: Length 18 $\frac{3}{8}$ ", Net Weight 1 lb. 6 oz. Manifold 2 acetylene cylinders.

ST610: Length 18 $\frac{1}{2}$ ", Net Weight 1 lb. 6 oz. Manifold 3 acetylene cylinders.

PIPELINER™ HEATING TIPS—Medium Duty



Versatile multi-flame heating tips for the popular medium duty Pipeliner and Pipewelders' Special torch bodies. Used for general heating of metals, brazing, hard surfacing, etc. Heads are manufactured from solid copper rod stock.

USED IN: Torch Bodies—MW5, PW1

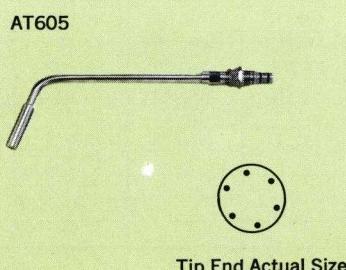
Stock No.	No. of Flames	Drill Size	Acet. PSI	Oxygen PSI	Acet. CFH	Oxygen CFH	Net B.T.U. Output
MT603	6	#64	5	6	28	31	40,124
MT605	6	#56	9	8	51	57	73,083
MT610	12	#57	9	28	90	100	128,970

MT603: Length 9 $\frac{1}{2}$ ", Net Weight 7 $\frac{1}{2}$ oz. Single acetylene cylinder.

MT605: Length 15 $\frac{3}{8}$ ", Net Weight 13 $\frac{1}{2}$ oz. Manifold 2 acetylene cylinders.

MT610: Length 17 $\frac{1}{2}$ ", Net Weight 17 oz. Manifold 2 acetylene cylinders.

AIRLINE™ HEATING TIPS—Light Duty



Handy light duty multi-flame tip for heating, brazing and applying hard facing metals. Uses medium pressure acetylene and oxygen.

USED IN: Torch Bodies—AW1 and AW6

Stock No.	No. of Flames	Drill Size	Acet. PSI	Oxygen PSI	Acet. CFH	Oxygen CFH	Net B.T.U. Output
AT605	6	#64	10	10	29	32	41,557

AT605: Length 9 $\frac{1}{2}$ ", Net Weight 6 $\frac{1}{2}$ oz. Single acetylene cylinder.

(Also Natural Gas and propane base fuel gases)

SILVER STAR HEATING TIPSFLAMEX®
Propane
Natural Gas

Medium pressure Oxy-FLAMEX®, propane heating tips provide high heating performance with low cost fuel gases including natural gas and propane base gases.

MANIFOLDING CYLINDERS FOR CONTINUOUS OPERATION. We recommend the manifolding of 4 LP-Gas cylinders for the ST625 and 7 for the ST635 tip or one 500 lb. cylinder. Also 2 oxygen cylinders. Recommendation is based on maximum withdrawal rate of 46 CFH from a 100 lb. propane tank ($\frac{1}{3}$ full) at 60°F.

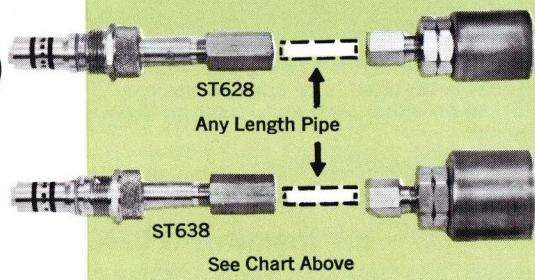
USED IN: ST615 and ST625 in Torch Bodies — SW1, SW2, SW10 and SW20A torch extension.

ST635 and ST638 used in Torch Body — SW10 only. Use ST635 and ST638 with $\frac{3}{8}$ " I.D. hose and H1522-510 LP-Gas cylinder regulator.

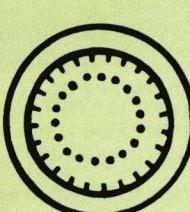
Stock No.	Fuel Gas	Approx. Pressure (PSI) with Valves OPEN		Consumption (CFH) Per Hour		Maximum BTU Output
		Fuel Gas	Oxygen	Fuel Gas	Oxygen	
ST615	Propane	8	30	98	400	226,282
	Nat. Gas	8	20	169	273	155,142
ST625 & ST628	Propane	15	50	178	718	411,002
	Nat. Gas	20	50	342	585	313,956
ST635 & ST638	Propane	20	55	266	1125	614,194
	Nat. Gas	25	40	357	661	327,726

HEATING AND
SPECIAL PURPOSE
TIPS

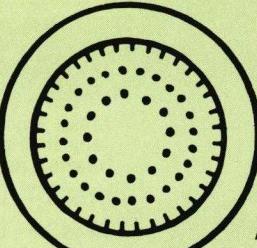
Head and Mixer Assemblies ONLY



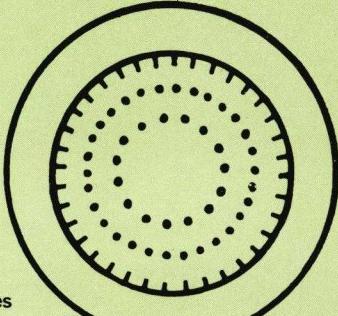
See Chart Above



ST615 Head



ST625 & ST628 Heads



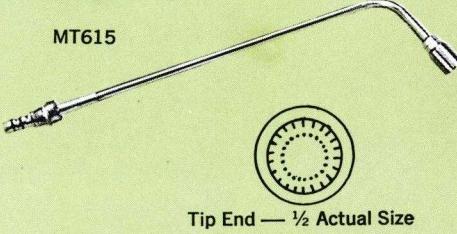
ST635 & ST638 Heads

PIPELINER™ HEATING TIP — FLAMEX® Propane Natural Gas

Multi-flame heating tip used with Oxy-FLAMEX®, propane, propane base fuels and natural gas.

USED IN: Torch Bodies—MW5 and PW1

Stock No.	Fuel Gas	App. Pressure (PSI) with Valves OPEN		Consumption (CHF) per hour		Avg. BTU Output
		Fuel Gas	Oxygen	Fuel Gas	Oxygen	
MT615	Propane	6-25	20-60	70-160	225-535	244,000
	Nat. Gas	5-25	15-50	96-267	175-450	111,000

Tip End — $\frac{1}{2}$ Actual Size**NE195 LP-GAS HEATING TORCH** — One Million BTU's

A new idea in heating. The traditional torch body and heating tip are combination into a unique single unit — the NE195 heating torch. Single function design provides excellent flashback resistance. $\frac{1}{8}$ "-18 inlet connections. Use $\frac{3}{8}$ " ID hoses.

Stock No.	Approx. Press. with Valves Open		Consumption Per Hour CFH		BTU's at Maximum PSI
	Propane	Oxygen	Propane	Oxygen	
NE195	10-35 PSI	35-100 PSI	230-515	755-1920	1,200,000





NATURAL GAS INJECTOR STYLE HEATING TIPS NWSA 220

SILVER STAR® INJECTOR STYLE HEATING TIPS—Heavy Duty

HEATING AND
SPECIAL PURPOSE
TIPS



Injector style heating tips operate on low cost, low pressure NATURAL GAS with oxygen. Deliver high volume of heat at fuel gas pressures from 3 ounces per square inch (5 inches water pressure) up to 15 PSI.

The National Fire Protection Association (NFPA #51, 1969) requires a pressure regulator, check valve, hydraulic seal or combination of these devices AT EACH STATION OUTLET to prevent back flow of gas. For line pressures of less than 1 PSI use a low pressure regulator and/or hydraulic seal. For line pressures over 1 PSI use one of Smith's H1500 or H1700 series line regulators. For cylinder operation use Smith's high volume H1522-510 regulator.

ST630 — A medium capacity heating tip. Use with SW10 torch body and $\frac{3}{8}$ " I.D. Hose.

ST640 — A high capacity heating tip. Use with SW10 torch body and $\frac{3}{8}$ " I.D. hose.

Stock No.	Approximate Pressure with Torch Valve Open		Consumption C.F.H.		Max. BTU'S at 3 oz. Fuel Press.
	Nat'l Gas	Oxygen	Fuel	Oxygen	
ST630 & ST633	3 ounces to 10 PSI	50 PSI*	143	241	131,000
ST640 & ST643	3 ounces to 15 PSI	75 PSI*	237	385	217,000

*Higher oxygen pressure may be used at higher fuel gas pressures.

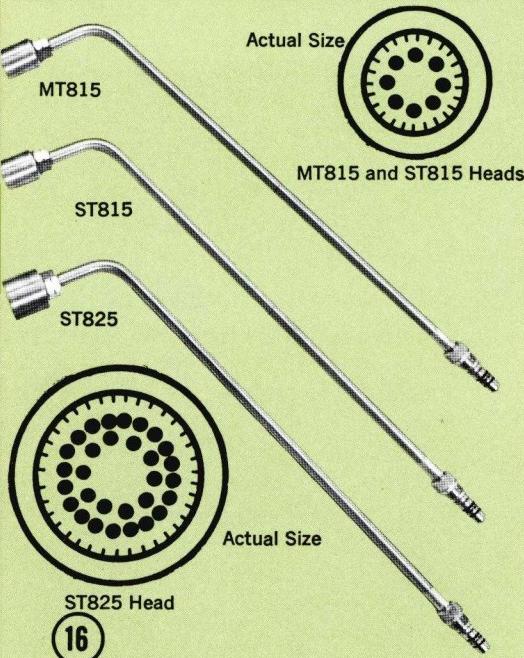
Head and Mixer Heating Assemblies

Custom built heating tips for maximum versatility in heating operations. Make any length heating tip . . . all that is required is to add the desired length of pipe (with $\frac{1}{4}$ " NPT pipe thread on either end) and attach to the heating assemblies. Pipe is not supplied.

ST633 — identical to ST630 in performance. See chart above.

ST643 — identical to ST640 in performance. See chart above.

MAPP® HEATING TIPS—(Also HPG® and other propylene base fuel gases)



PIPELINER™ MAPP® TIP—Medium Duty

MT815 — medium capacity tip. Use in MW5 or PW1 torch bodies.

Stock No.	Approximate Pressure with Torch Valve Open		Consumption C.F.H.		Avg. BTU Output
	Fuel Gas	Oxygen	Fuel	Oxygen	
MT815	15-35 PSI	40-70 PSI	125-230	395-650	421,000

SILVER STAR® MAPP® TIP—Heavy Duty

ST815 — Medium capacity tip. Use in SW1, SW2, SW10 torch bodies and SW20 torch extension.

ST825 — High capacity heating tip. Use in SW10 torch body with $\frac{3}{8}$ " I.D. hoses.

Stock No.	Approximate Pressure with Torch Valve Open		Consumption C.F.H.		Avg. BTU Output
	Fuel Gas	Oxygen	Fuel	Oxygen	
ST815	15-35 PSI	40-70 PSI	125-230	395-650	421,000
ST825	22-35 PSI	60-110-PSI	200-528	590-1500	865,000

MAPP is a registered trademark of AIRCO

SILVER STAR® SPECIAL PURPOSE TIPS—Heavy Duty

JX16 Aluminum Cutting Tip

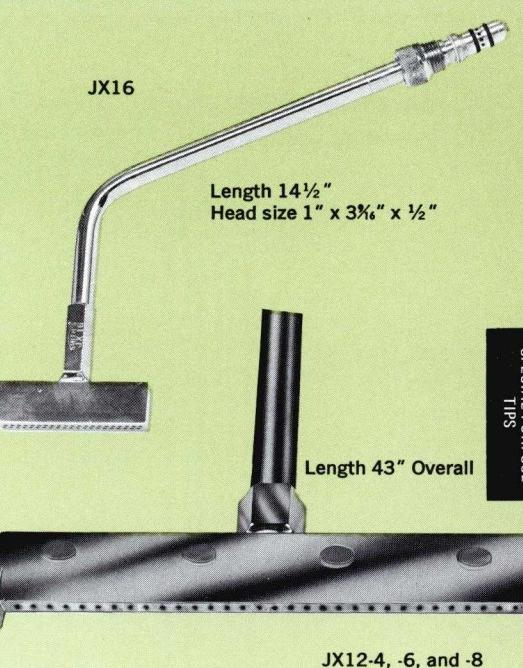
Used to "cut" aluminum extrusions — actually melts the aluminum rather than cutting it as a standard tip cuts steel for a straight edge cut. The JX16 is perfect for use in aluminum extrusion mills and in any other situation where similar cuts are needed. Can also be used as a heating tip. Uses LP-gas or natural gas with oxygen. Recommended pressures: LP-gas 25 PSI, Oxygen 60 PSI — Natural gas 25 PSI, Oxygen 50 PSI. The head of the JX16 is 1" wide x 3 $\frac{1}{16}$ " long x $\frac{1}{2}$ " thick, and contains 42 orifices #60.

USE IN: SW1, SW2 and SW10 Torch Bodies

JX12-4, -6 and -8 Descaling Tips

For flame descaling, flame priming and all similar applications requiring high heat over a wide area. The JX12 Descaling Tips features built-in stainless steel skids to keep the tip up off the workpiece — reduces popping and possibility of orifice fouling. Has 39" long tube. Head measures 4, 6, or 8" x 1 $\frac{1}{4}$ " x $\frac{1}{2}$ " thick. (Length is measured from right end orifice to left end orifice — Please specify length desired.) The 6" head has 52 orifices, the 8" has 68. Uses acetylene and oxygen; recommended pressure is 10 PSI each gas.

USE IN: SW1, SW2 and SW10 Torch Bodies



PIPELINER™ SPECIAL PURPOSE TIPS—Medium Duty

MT400 Instrument Tip

Has 6" flexible tube for radiator soldering or other "close quarter" work. MT401: tip end only. MT402: mixing section.

USE IN: MW5, PW1 Torch Bodies

MT410 Instrument Tip

Uses oxygen and acetylene gases. 11" annealed copper tube can be bent to any desired shape. For instrument and piping work, silver brazing, bronze and fusion welding. Supplied LESS tip end. Order tip ends separately: uses ST420 Series listed in the chart below.

USE IN: MW5, PW1 Torch Bodies

ST420 Series Tip End Data Chart

Tip End No.	Welding Range	Pressure Ea. Gas
ST420-0	up to $\frac{1}{32}$ "	3
ST420-2	up to $\frac{1}{16}$ "	3
ST420-4	$\frac{1}{32}$ "	5
ST420-6	$\frac{1}{16}$ "	5

Tip End No.	Welding Range	Pressure Ea. Gas
ST420-8	$\frac{1}{4}$ "	8
ST420-10	$\frac{1}{2}$ "	11
ST420-12	$\frac{5}{8}$ "	11

MT600 Twin Flame Tip

Handy for soldering or heating circular objects. Has two 10" annealed copper tubes. Uses LT101 to LT106 tip ends; shipped with two LT103 tip ends.

USE IN: MW5, PW1 Torch Bodies

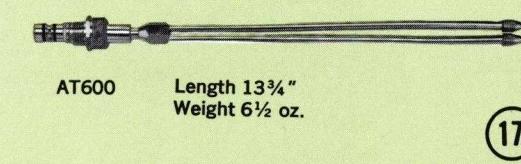


AIRLINE™ SPECIAL PURPOSE TIPS—Light Duty

AT600 Twin Flame Tip

Burns oxygen and acetylene. Has two 10" flexible tubes each equipped with LT103 tip end.

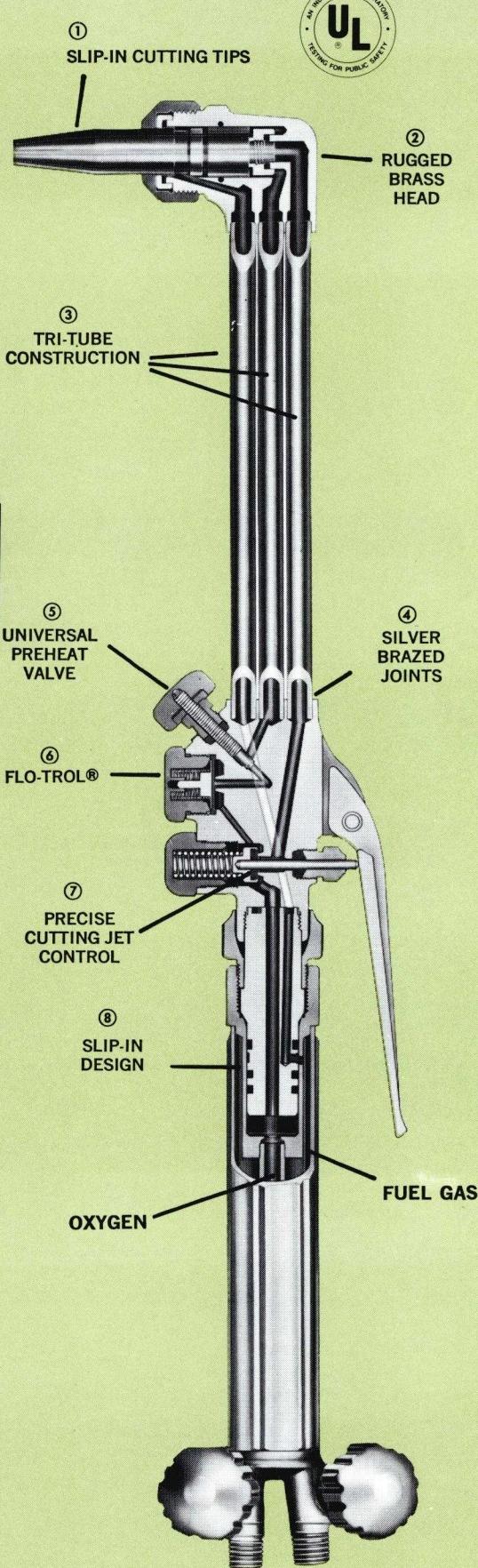
USE IN: AW1 Torch Body





CUTTING ASSEMBLIES

NWSA 220



CUTTING ASSEMBLIES

These features help to make SMITH'S equipment a favorite with master craftsman and beginner alike.

The true craftsman immediately senses that here is equipment he controls absolutely . . . that responds instantly to his touch. Much of the credit is due to the SMITH'S features shown here.

① SLIP-IN CUTTING TIPS

Change quickly in just seconds. Seat perfectly by hand; no wrench needed. Made from 99.9% pure copper, the finest material available for this purpose . . . absorbs greater amounts of reflected heat without backfiring. Asbestos seats minimize transfer of heat to operator . . . torch operates cooler. Recessed seats protected from damage . . . saves on expensive reseating required on metal-to-metal seating tips.

② RUGGED BRASS HEAD

Machined from solid brass forging for strength and corrosion resistance. Clean head design gives clear view of cut area.

③ TRI-TUBE CONSTRUCTION

Three stainless steel tubes and silver brazed construction is strong without unnecessary weight. Excellent balance and handling ease for short or extended cutting jobs. SAFETY BONUS . . . oxygen and fuel gas are kept separate until mixed in the cutting tip . . . an added protection against flashback.

④ SILVER BRAZED JOINTS

Extra-strong leak-proof assembly joints are silver brazed for maximum safety, strength and dependability.

⑤ UNIVERSAL PREHEAT VALVE

Located for maximum convenience to any operator . . . easily reached and adjusted by right or left handed burners for precise control of preheat flames.

⑥ FLO-TROL®

Exclusive Flo-Trol safety feature stops a major cause of flashbacks. Flo-Trol is a spring loaded back pressure check valve that prevents accidental oxygen-fuel gas mixture from traveling back into the high-pressure seat area where, under certain conditions, they could burn out the seat, damage or destroy the cutting assembly, and possibly injure the operator.

⑦ PRECISE CUTTING JET CONTROL

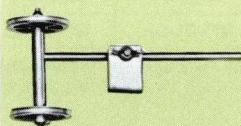
Carefully engineered cutting jet lever and spring-loaded seat provides accurate and easy control of cutting oxygen stream for all types of cutting, burning, gouging, rivet cutting, piercing, rivet busting and plate cutting.

⑧ SLIP-IN DESIGN

Permits operator to position cutting assembly anywhere in a 360° arc . . . without extinguishing the flame. An absolutely essential feature in jobs combining horizontal, vertical and overhead burning.

WIDE RANGE OF TIPS AND FUEL GASES

Select from the many cutting and special purpose tips available for all popular fuel gases including: acetylene, propane, FLAMEX®, natural gas, HPG®, MAPP®, and other propane or propylene base fuel gases.



CUTTING TORCH CARRIAGE



CIRCLE CUTTING GUIDE

NE134A CUTTING TORCH CARRIAGE

Mounts on cutting assembly for long straight line cuts.

Fits: SILVER STAR and PIPELINER cutting assemblies.

CIRCLE CUTTING GUIDE

Cut perfect circles up to 36" in diameter with cutting assemblies.

SC650A . . . for SILVER STAR cutting assemblies.

MC650A . . . for PIPELINER and AIRLINE cutting assemblies.

CUTTING ASSEMBLIES NWSA 220



SILVER STAR® CUTTING ASSEMBLIES—Heavy Duty

SC200 Series

Quickly converts Silver Star torch bodies into efficient cutting torches. Cuts up to 8" thick steel in one pass. Solid silver brazed construction. Features "O" ring seating, special FLO-TROL® safety protection and easy to change Slip-In cutting tips. Operates on medium pressure fuel gases — acetylene, propane, butane, natural gas and MAPP®.

USE IN: Torch Bodies—SW1, SW2, SW10

SC500 Series—"Sidewinder"

"Sidewinder" cutting assembly has oxygen preheat control valve on left side. Has same quality construction and features of standard Smith's SC200 Series assemblies.

USE IN: Torch Bodies—SW1, SW2, SW10

Stock No.	Style	Head Angle	Uses Tips
SC200	Standard	180°	Oxy-Acetylene: SC10-1 to SC10-4, SC12-000 to SC12-5, SC13-1, SC13-3, SC14-1, SC17-00
SC205		75°	SC17-0, SC17-2, SC80-1, SC81-1, SC110,
SC209		90°	Oxy-Propane: SC46-1 to SC46-5, SC50-00 to SC50-5, SC22-2, SC23-1, SC24-1, SC112.
SC505	Sidewinder	75°	Oxy-FLAMEX®, Propane: SC40-0 to SC40-5.
SC509		90°	Oxy-MAPP®: SC56-00 to SC56-5, SC90-0 to SC90-5, SC17-0M, SC22-2M, SC23-3M, SC24-3M, SC113.
			Oxy-HPG®, Propylene: SC60-0 to SC60-5.

"LC" Cutting Assemblies

Uses SCREW-IN style cutting tips. Requires wrench to seat tips. Has same quality construction and safety features of Smith's standard cutting assemblies.

USE IN: Torch Bodies—SW1, SW2, SW10

Stock No.	Head Angle	Uses Tips
LC305	75°	Oxy-Acetylene: LCO-4 to LC4-4, LCO-6 to LC4-6
LC309	90°	Oxy-LP Gases: LC46-1 to LC46-4

AIRLINE™ CUTTING ASSEMBLIES—Light Duty

AC300 Series

Fits into AW1 torch body to form a small light weight cutting torch with cutting capacity up to 3" steel. Has same quality construction and features built into each Smith cutting assembly.

USE IN: Torch Body — AW1

Stock No.	Head Angle	Uses Tips
AC305	75°	Oxy-Acetylene: MC12-00 to MC12-4, MC13-3, MC14-1, MC15-3, MC17-00, MC17-0, MC17-2
AC309	90°	Oxy-FLAMEX®, Propane: MC40-0 to MC40-4 Oxy-HPG®, Propylene: MC60-0 to MC60-4 Oxy-MAPP®: MC90-0 to MC90-4

SC209
Length 12½"
Weight 1 lb. 14 oz.

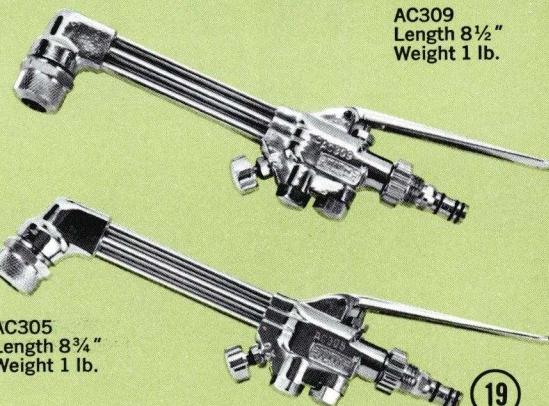


SC509
Length 12¾"
Weight 1 lb. 14 oz.
"Sidewinder"



LC309
Length 12½"
Weight 1 lb. 14 oz.

AC309
Length 8½"
Weight 1 lb.

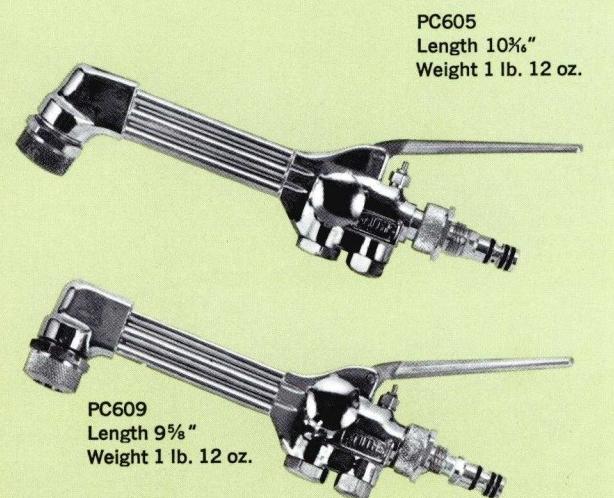
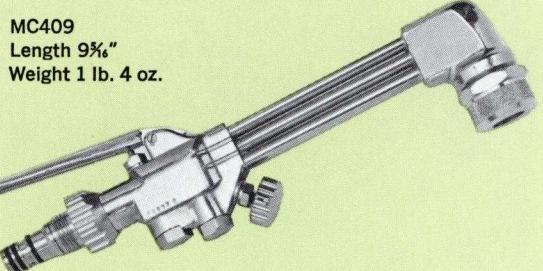
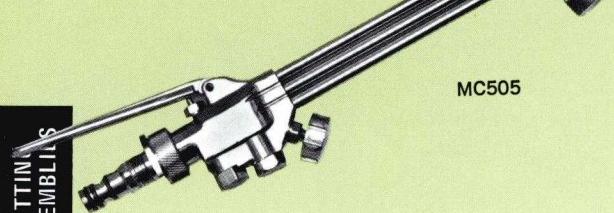


AC305
Length 8¾"
Weight 1 lb.

CUTTING
ASSEMBLIES



PIPELINER™ CUTTING ASSEMBLIES—Medium Duty

CUTTING
ASSEMBLIES

MC500 Series

Popular medium duty cutting assembly easily cuts up to 6" steel. Solidly constructed to last — silver brazed joints, stainless steel tubes, brass forged butt and head. Uses Smith's Slip-In cutting tips. Exclusive FLO-TROL® protection for added safety. Has same quality features and construction as larger Silver Star assembly.

USE IN: Torch Bodies—MW5, PW1

Stock No.	Head Angle	Uses Tips
MC505	75°	Oxy-Acetylene: MC12-00 to MC12-5, MC13-3, MC14-1, MC15-3, MC17-00, MC17-0, MC17-2
MC509	90°	Oxy-FLAMEX®, Propane: MC40-0 to MC40-4 Oxy-HPG®, Propylene: MC60-0 to MC60-4 Oxy-MAPP®: MC90-0 to MC90-4

MC400 Series

Medium duty MC409 cutting assembly is designed for use with larger size "SC" series Slip-In cutting tips. Otherwise identical to the MC500 series assemblies.

USE IN: Torch Bodies—MW5, PW1

Stock No.	Head Angle	Uses Tips
MC409	90°	Oxy-Acetylene: SC10-0 to SC10-4, SC12-000 to SC12-5, SC14-1, SC15-1, SC17-00, SC17-0, SC17-2 Oxy-FLAMEX®, Propane: SC40-0 to SC40-5 Oxy-HPG®, Propylene: SC60-0 to SC60-5 Oxy-MAPP®: SC90-0 to SC90-5

PC600 Series—Pipewelders' Special

Designed and built to the exacting requirements of professional pipewelders. Actually a heavy duty Silver Star assembly shortened for "close quarter" work where most pipe cutting and joining is done. Oxygen preheat valve is on the side, "Sidewinder" style. Cutting lever "flops" over, won't catch on objects when torch is dragged.

USE IN: Torch Bodies—MW5 or PW1

Stock No.	Head Angle	Uses Tips
PC605	75°	Oxy-Acetylene: SC10-0 to SC10-4, SC12-000 to SC12-5, SC13-3, SC14-1, SC15-1, SC17-00, SC17-0, SC17-2, SC110
PC609	90°	Oxy-FLAMEX®, Propane: SC40-0 to SC40-5 Oxy-HPG®, Propylene: SC60-0 to SC60-5 Oxy-MAPP®: SC90-0 to SC90-5

SILVER STAR® HAND CUTTING TORCHES

... provide the light, lively feel sought by professional burners . . . a torch with balance and handling ease that doesn't unnecessarily fatigue on long, hot jobs. Smith's SILVER STAR industrial hand cutting torches have proved their excellence, durability and handling ease in every conceivable job . . . from underground mines to skyscrapers.

WIDE RANGE OF GASES

Smith's medium pressure hand cutting SILVER STAR torches can be used with any of the widely available industrial fuel gases including ACETYLENE, PROPANE, BUTANE, and NATURAL GAS . . . and most of the newer BOTTLED gases. Smith has the tip designed to best utilize the individual characteristics of each gas to best advantage.

WIDE RANGE OF TIPS . . . CUTTING CAPACITY 12"

Select the tip to match the job, the right tip will . . . cut faster . . . cut cleaner . . . save machining . . . use less gas . . . and cut labor time. Select from 4 pages of tips available for the SILVER STAR cutting torch.

① RUGGED HEAD — BRASS OR MANGANESE BRONZE

Silver Star cutting torches offer choice of tough, forged brass or manganese bronze heads in 75°, 90° or 180° angles. Heads feature trim, modern head design for top visibility.

② SLIP-IN TIPS

Time and money saving convenience . . . tips change in just seconds. Seat perfectly by hand . . . no wrench needed. Change tips to match the job — either tip size or application. It's safer, and saves time and money. Smith's one-piece tips are swaged from 99.9% pure copper, the finest material for cutting tip durability, safety and performance.

③ IN-TIP MIX

Extra-SAFE in-tip mix keeps gases separate until mixed in the tip. Increased resistance to flashback . . . safer for the burner.

④ THREE-TUBE DESIGN

Three strong stainless steel tubes and silver brazed construction has strength without unnecessary weight. Excellent balance and handling ease.

⑤ EASY-GRIP HANDLE

High quality nickel-plated brass handle has fluted surface for firm steady grip. Fits gloved hand comfortably and naturally.

⑥ "OVER 'N UNDER" LEVER

Use the oxygen jet lever "under" the torch handle . . . or "over" . . . whichever the skilled burner prefers. Lever position is easily and quickly changed with standard tools. Either way the burner has top control for any cutting job . . . from thin sheet metal to 12" thick steel . . . from gouging to busting rivets. A "button" style lever with locking feature is also available on some models.

⑦ BALL STYLE VALVES

Corrosion resistant stainless steel balls and tough forged brass seating surfaces provide positive gas shut-off, smooth adjustment and excellent gall resistant characteristics. Long valve thread engagement in 5-layer packing of Teflon® prevents flame fluctuation and valve wobble. Large fluted knob provides positive grip even with heavy gloves. "Drag" can be adjusted to operators preference. Valves located for convenient use by right or left handed burners.

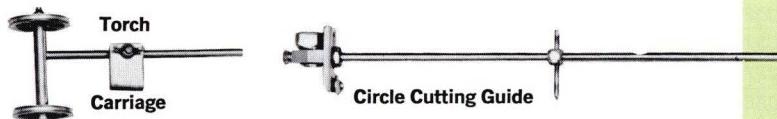
⑧ REPLACEABLE HOSE CONNECTIONS

Hose connections are easily and inexpensively replaced . . . saves valuable downtime in case of accidental damage.

⑨ BRASS BUTT

Torch butt and front handle support are precision machined from dense brass forgings for long high-quality performance.

TIME SAVING ACCESSORIES



CIRCLE CUTTING GUIDE. Cuts perfect circles up to 36" diameter.
SC650A — fits SILVER STAR and TUF TONY cutting torches

CUTTING TORCH CARRIAGE. Use to make long, straight line cuts.
Wheels have 5/32" flat machined groove for following small track.
NE134A — fits SILVER STAR cutting torches





CUTTING TORCHES NWSA 220

Medium Pressure

SILVER STAR® CUTTING TORCHES—Heavy Duty

Lever Style

Over 'n Under

SC229

Length 20½"

Weight 2½ lbs.

SC220

180° Head

Length 21"

Weight 3 lbs.

Rugged Duty

Head

SC229-S

Weight 2 lbs. 14 oz.

Button Torch

SC449

Length 20½"

Weight 2 lbs. 10 oz.

Silver Star® Lever Style Standard Length 20½"

Silver Star cutting torches provides solid construction and top handling ease for hundreds of jobs in metal working, fabricating, shipyards, salvage and other related industries. Silver brazed joints throughout. Head and butt machined from dense brass forgings. Ball style control valves provide positive gas shut-off and superior seating characteristics.

- 12" cutting capacity
- Reversible lever, "over" or "under" position
- Uses "Slip-In" cutting tips
- Replaceable hose connections
- Tips for gouging, rivet cutting, washing, riser cutting, rivet blowing, welding, heating, plate cutting — straight tips, bent tips, short and extra-long tips
- Versatile — uses acetylene, propane, FLAMEX®, propylene, HPG®, APACHI®, B-PLUS™, CHEM-O-LENE®, MAPP®, Liquid Air Fuel-Gas, natural gas and other fuel gases.

Extra-Long or Short Torches

Wide range of cutting torches to meet specific needs — standard sizes stocked: 17", 27" and 36" in over-all length. Other lengths (7 feet long, etc.) available on special order.

Rugged Duty Head

Standard length (20½") Silver Star torch has forged manganese bronze head to withstand unusually severe use. Choice of 75° or 90° head.

Button Style Torches

Thumb operated button locks on cutting oxygen for operator convenience — preferred by many for extended cutting operations. Available in standard length (20½") and choice of 75° or 90° head.

Stock No.	Head Angle	Length	Style	Uses Tips
SC175	75°	17"	Lever	Oxy-Acetylene: SC10-0 to SC10-4, SC12-000 to SC12-6, SC56-00 to SC56-6
SC179	90°	17"		Oxy-FLAMEX®, Propane: SC40-0 to SC40-6, SC46-1 to SC46-6, SC50-00 to SC50-6
SC220	180°	21"		Oxy-HPG®, Propylene: SC60-0 to SC60-6
SC225	75°	20½"		Oxy-MAPP®: SC56-00 to SC56-6, SC90-0 to SC90-6
SC229	90°	20½"		Special Purpose Tips All medium pressure special purpose tips listed on pages 29-31 may be used with the Silver Star cutting torches.
SC275	75°	27"		
SC279	90°	27"		
SC365	75°	36"		
SC369	90°	36"		
SC225S	75°	20½"	Manganese Bronze	
SC229S	90°	20½"		
SC445	75°	20½"	Button	
SC449	90°	20½"		

TUF-TONY™ CUTTING TORCHES—Rugged Duty

Here is a torch as tough as it looks — the "Tuf-Tony". It's designed and built for rugged use and heavy cutting up to 24 inch thick steel.

Forged manganese bronze head is extra-large and tough. Large, strong one-piece stainless steel tubes run the entire length of torch and are silver brazed to head and butt. Because of its superior design the "Tuf-Tony" has a pressure drop of ONLY 3 POUNDS between the hose connections and torch head compared to drops of 20 to 30 pounds in standard cutting torches. This means increased efficiency, faster cutting and gas savings.

EASE-ON cutting oxygen jet feature smoothly and quickly eases into full force cutting, practically eliminating tip clogging blowback in piercing operations. Nickel plated lever is made of manganese bronze. High strength cast aluminum alloy handle has non-slip surface.

Stock No.	Head Angle	Length	Uses Tips
SC720	180°	21"	
SC725	75°	21"	All medium pressure "SC" series cutting or special purpose cutting tips listed on pages 28-31 and 33 — no limit to tip size.
SC729	90°	21"	
SC730	180°	36"	
SC735	75°	36"	
SC739	90°	36"	



"LC" SERIES CUTTING TORCHES—Heavy Duty

Lever Style

"LC" torches operate on medium pressure oxygen and acetylene or LP Gases. Has cutting capacity up to 12". Uses screw-in "LC" tips.

Button Style

LC440 Series features button style oxygen jet control favored by many for extending cutting operations. Uses "LC" screw-in tips.

Rugged Duty Heads

Button torches also available with forged manganese bronze heads to withstand rugged use. Uses "LC" series screw-in cutting tips.

Use "LC" screw-in tips



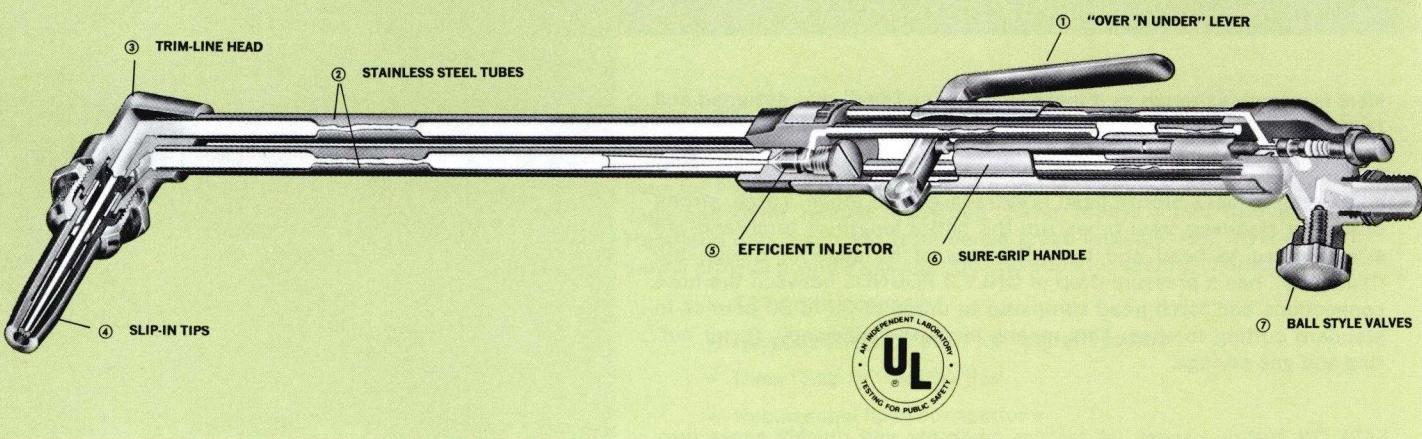
Stock No.	Head Angle	Length	Style	Uses Tips
LC625	75°	20½"	Lever	Oxy-Acetylene: LC0-4 to LC4-4, LC0-6 to LC6-6
LC629	90°	20½"		Oxy-LP Gases: LC46-1 to LC46-6
LC445	75°	20½"	Button	
LC449	90°	20½"		
LC445-S	75°	20½"	Button	
LC449-S	90°	20½"		

CUTTING
TORCHES



Injector Style CUTTING TORCHES NWSA 220

Low Pressure Natural Gas



Smith's injector torch provides quality industrial cutting up to 10" steel.

① "OVER 'N UNDER" LEVER

Smith's lever offers choice of two positions to meet operator preference.

② STAINLESS STEEL TUBES

Stainless steel tubes and silver brazed construction provides strength without unnecessary weight.

③ TRIM-LINE HEAD

Clean modern head design offers unobstructed view of cut area and excellent torch balance.

④ SLIP-IN TIPS

Change tips quickly in just seconds. Seat perfectly by hand . . . no wrench needed. Made from high-quality copper for top per-

formance. Asbestos seats minimize heat transfer for cooler operation.

⑤ EFFICIENT INJECTOR

Smith's modern injector design precisely proportions and mixes preheat fuel and oxygen for maximum heat. Operates efficiently at lower fuel gas pressures (as low as 3 oz. per square inch or approximately 5" water pressure) through medium pressures of 1 to 25 PSI . . . with NATURAL GAS, CITY GAS or LP-GASES.

⑥ SURE-GRIP HANDLE

Extruded nickel-plated brass handle gives firm, steady grip.

⑦ BALL STYLE VALVES

Corrosion resistant stainless steel balls and tough forged brass seating surface provide positive gas shut-off and smooth adjustment. Long valve thread engagement in 5-layer Teflon® packing prevents flame fluctuation and valve wobble.

INJECTOR STYLE SILVER STAR® TORCHES — Heavy Duty

SC840
Length 21"
Weight 2 lbs. 14 oz.

SC845
Length 20½"
Weight 2 lbs. 12 oz.



Designed to operate at lower fuel gas pressures (as low as 3 oz. per sq. inch or approximately 5" water pressure) and up to medium pressures of 1 to 25 PSI with natural gas, city gas or LP-Gases. Provides fast, quality cutting with low cost fuel gases.

Smith's SC840 Series has an unusually clean head design for injector style torches — provides clear view of cut and excellent torch balance. Uses quick-changing slip-in cutting tips plus many other features of Smith's Silver Star torches.

The National Fire Protection Association (NFPA #51, 1969) and OSHA require a pressure regulator, check valve, hydraulic seal or a combination of these devices AT EACH STATION OUTLET to prevent back flow of gas. For line pressure of less than 1 PSI use a low pressure natural gas regulator. For line pressures over 1 PSI use one of Smith's H1500 Series or H1700 Series line regulators.

Stock No.	Head Angle	Length	Uses Tips
SC840	180°	21"	Oxy-Natural Gas/LP Gases: SC28-1 to SC28-4, SC31-00 to SC31-6, SC33-3, SC34-3, SC35-2, SC111
SC845	75°	20½"	
SC849	90°	20½"	

TWO-HOSE MACHINE TORCHES—Heavy Duty

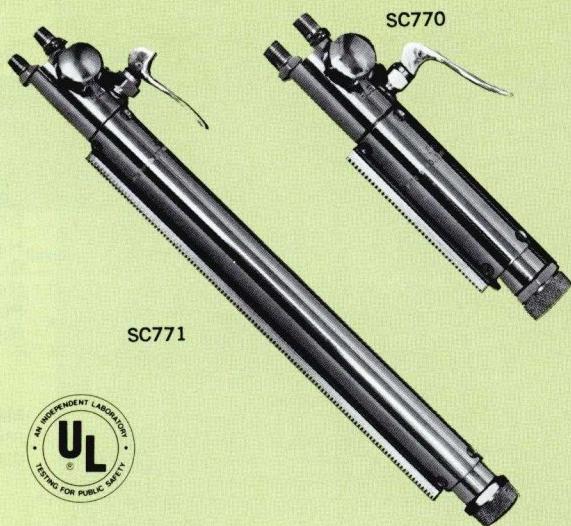
SC770 Series—Medium Pressure

New two hose torches provide superior performance at low initial cost. "Ease-on" cutting lever action prevents tip-clogging slag blow back in piercing operations . . . extending tip life. Oxygen lever has swivel cam action and rotates to any position. Torch barrel is adjustable to four positions at 90° increments. Cuts up to 12".

High quality ball style valves provide fine adjustment and positive gas shut-off. Unique valve is completely self-contained with its own seating surface. Entire valve is replaceable in the field with standard tools.

Stock No.	Length	With Rack 32 Pitch*	Uses Tips (Up to size 6)
SC770	8"	SC770-1	Oxy-Acetylene: SC12 Series, SC56 Series Oxy-Propane: SC21A Series, SC46 Series, SC50 Series, SC18A Oxy-FLAMEX®, Propane: SC40 Series Oxy-HPG®, Propylene: SC60 Series Oxy-MAPP®: SC21A-M Series, SC56 Series, SC90 Series
SC771	15½"	SC771-1	

*Optional 24 Pitch rack available on request. Specify 24 Pitch Rack (SC770-2, SC771-2).



CUTTING TORCHES

THREE-HOSE CUTTING TORCHES—High Capacity

SC780 Series—Medium Pressure

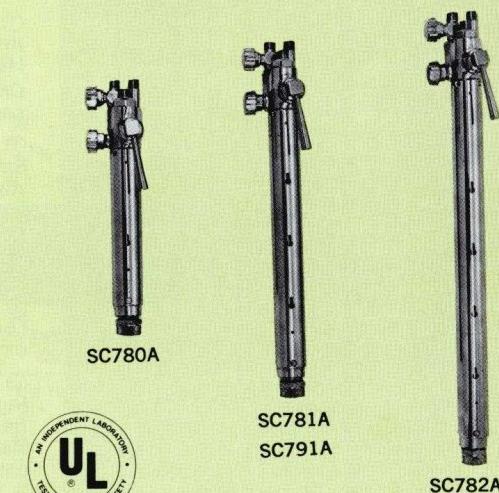
High capacity 3-hose machine torch cuts up to 24" with acetylene and up to 20" with medium pressure LP-Gases. Fits all popular makes of cutting machines. Handle tube is 1 1/8" dia. Handle is adjustable to four positions at 90° increments. "Ease on" cutting jet eliminates tip-clogging slag blow-back in piercing operations.

SC791-A Injector Torch—Low Pressure

Injector style torch cuts up to 10" steel with pressures ranging from 3 oz. per sq. in. and up to medium pressures of 1 to 25 PSI. See page 24 for NFPA requirements.

Medium Pressure	Low Pressure	Length	Uses Tips
SC780A		11"	"SC" Series
SC781A	SC791A	15½"	
SC782A		20"	

Racks (1/4" x 1/4")	
32 Pitch	24 Pitch
SC780-1	SC780-2
SC781-1	SC781-2
SC782-1	SC782-2



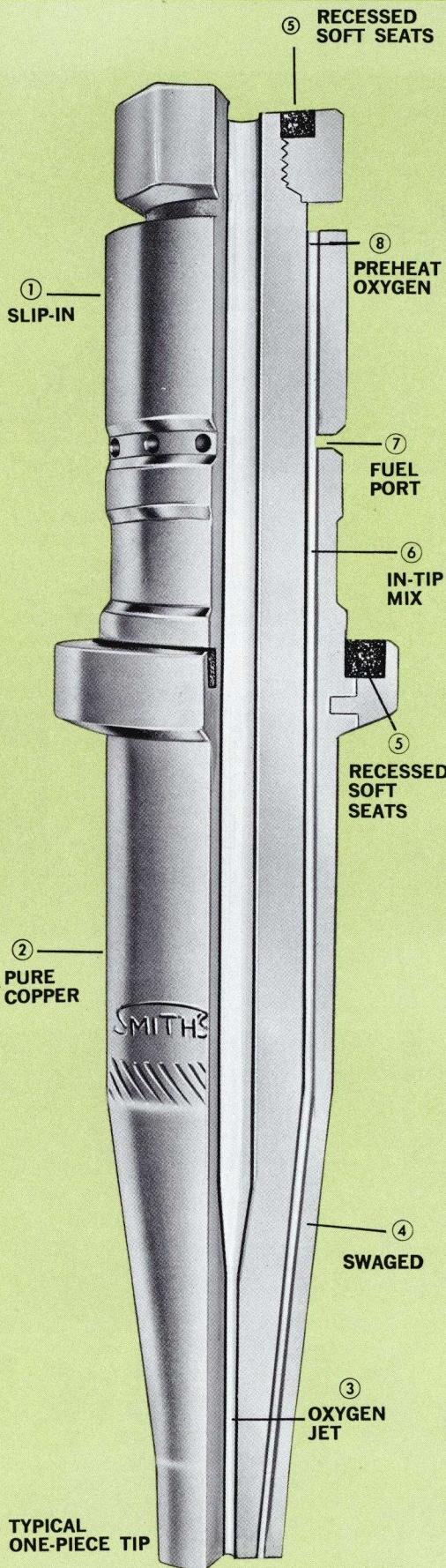
ACCESSORIES FOR MACHINE CUTTING TORCHES

H1050 GAS CONTROL UNIT. Solenoid operated. Changes flame settings from high to low instantly. Use high, forced preheat for fast starts, then drop back to low to maintain cut. Save up to 1/2 cylinder out of every 5 you use.

SC290 BEVEL CUTTING ATTACHMENT makes bevel cuts in angles up to 90° either side of the vertical. For SC780 Series torches.

SC659A DOUBLE CUTTING ATTACHMENT provides two cuts with a single torch. Maximum space between cuts is 12 5/8". Use in SC780 series torches. Use with "SC" series tips.





... EASIEST TO USE... MOST EFFICIENT AND LONGEST LASTING TIPS YOU CAN BUY

Whatever your application . . . whatever your fuel gas . . . there's a Smith's "Slip-In" tip to provide fast, economical and quality cutting.

WIDE VARIETY OF FUEL GASES . . . select from quality tips for dependable performance with ACETYLENE, PROPANE, BUTANE, medium or low pressure NATURAL GAS, MAPP and the growing number of BOTTLE GASES. Smith's has the tip designed to best utilize the individual characteristics of each gas to best advantage.

WIDE RANGE OF TIPS . . . select the tip to match the job . . . it's faster, gives a cleaner cut, saves on cleanup and machining, saves gas and cuts expensive labor time. There are tips for:

Hand Cutting	Machine Cutting	Heavy Cutting — to 24"
Gouging	Bulkhead Cutting	Bevel Cutting
Heating	Rivet Cutting	Piercing
Plate Cutting	Flue Cutting	Rivet Washing
Rivet Blowing	Welding	Riser Cutting
	High Speed Machine Cutting	

MANY SIZES . . . a dozen different sizes cover the complete range from thin sheet metal (less than $\frac{1}{8}$ "") up to 24" thick steel. Gives safer operation . . . no need for operator to "force" or "starve" tip causing a possible "flashback" or pre-ignition.

... EASIEST TO USE... MOST EFFICIENT AND LONGEST LASTING TIPS YOU CAN BUY

① SLIP-IN TIP

An exclusive Smith's engineered design permitting tip changes in just SECONDS. Hand tight . . . no wrench needed.

Change tips to match the job — either tip size or application. It's safer . . . and it saves time and money. The correct tip does the job faster, cleaner and with less gas.

② PURE COPPER — 99.9%

Smith's one-piece tips are swaged from pure electrolytic copper, the finest material for cutting tip durability, safety and performance. Pure copper tips last longer because copper conducts heat better, tip ends don't melt as easily as leaded-copper or copper-alloy tips. Pure copper tips are safer . . . they operate cooler and are less susceptible to flashback or pre-ignition. Smith's pure copper tips can perform where leaded tips are at a disadvantage.

③ CUTTING JET

Long cutting oxygen straightaway is precision swaged, delivers non-turbulent oxygen stream for smooth-face, slag-free cuts.

④ SWAGED

Rigidly controlled precision swaging operation produces smooth gas passages that minimize turbulence . . . assures high heat transfer for fast starts and smooth slag-free cuts. Smith's swaged tips are pure copper tips . . . not alloyed to be easily worked as are "drilled" tips.

⑤ RECESSED SOFT SEATS

Recessed damage-proof soft seats . . . eliminates costly reseating of metal-to-metal seating tips. Seats are graphite impregnated asbestos fibre . . . forms easily to head . . . retards heat transfer to torch head . . . promotes cooler operation. Easily replaced for just pennies. G930 seat set for "SC" tips and G691 for "MC".

⑥ IN-TIP MIX

Smith offers the added safety of IN-TIP MIX. Acetylene and oxygen are kept separate in the torch . . . mix only in the tip.

⑦ FUEL PORT

Precision drilled fuel port meters acetylene to be mixed with oxygen for the preheat flames.

⑧ PREHEAT OXYGEN

Preheat ports are precision swaged to provide balanced, stable preheat flames. Oxygen mixes with acetylene at (7) fuel port.

100% TESTING

Every Smith cutting tip is individually tested. Each tip must pass stringent tests covering the preheat flames, cutting jet (stinger), gas flow and flashback resistance. Tips are liquid honed to insure smooth, quality cutting performance.

MC12 Series

Oxy-Acetylene

Slip-in cutting tips for general medium duty hand cutting. Use with medium pressure acetylene and oxygen.

USE IN: Cutting Assemblies — PIPELINER MC505, MC509 (all sizes); AIRLINE AC305, AC309 (Max. tip size MC12-4)

Tip Number	Cutting Range
MC12-00	Up to $\frac{3}{8}$ "
MC12-0	$\frac{3}{16}$ " - $\frac{3}{8}$ "
MC12-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
MC12-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
MC12-3	$1\frac{1}{2}$ " - 2"
MC12-4	$2\frac{1}{2}$ " - 3"
MC12-5	4" - 6"



MC 12 Series
Oxy-Acetylene

“MC” ACETYLENE SPECIAL PURPOSE TIPS — Medium and Light Duty

Gouging Tip

Oxy-Acetylene

For removing old welds or defects in steel. Heavy preheat. Use 5 PSI acetylene and 20 PSI oxygen.

USE IN: Cutting Assemblies—PIPELINER MC505, MC509 and AIRLINE AC305 and AC309

Rivet Cutting

Oxy-Acetylene

Cuts rivet heads and bolts flush with surface. Use 4 PSI acetylene pressure and 35-45 PSI oxygen.

Rivet Blowing & Metal Washing

Oxy-Acetylene

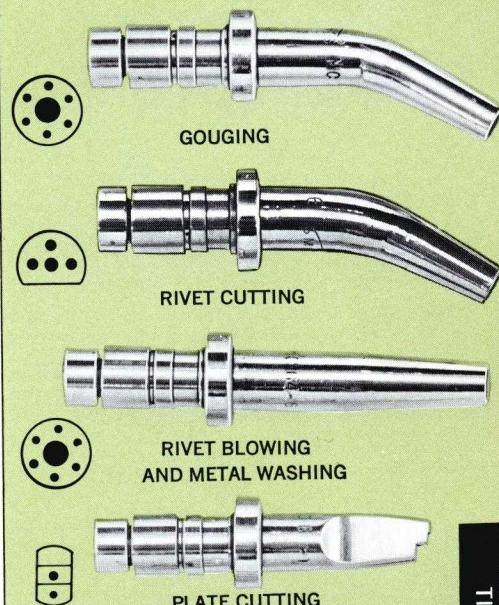
Removes metal quickly. Primarily for rivet blowing but can be used for washing, gouging, veeing and groove cutting. Use 5 PSI acetylene and 20 PSI oxygen.

Plate Cutting

Oxy-Acetylene

“Drag” type step tip cuts thin sheet metal with absolute minimum burnover and plate warpage. Use 3 PSI acetylene and 20 PSI oxygen for sizes 00 and 0. Use 30 PSI oxygen for size 2.

Tip Number	Range
MC13-3	$\frac{1}{4}$ " Deep x $\frac{3}{8}$ " Wide
MC14-1	$\frac{3}{4}$ " Rivets
MC15-3	$\frac{1}{4}$ " - $\frac{3}{8}$ "
MC17-00	$\frac{1}{8}$ " - $\frac{1}{4}$ "
MC17-0	$\frac{3}{8}$ "
MC17-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "



GOUGING
RIVET CUTTING
RIVET BLOWING
AND METAL WASHING
PLATE CUTTING

“MC” FUEL GAS CUTTING TIPS — Medium and Light Duty

MC40 Series

Oxy-FLAMEX®, Propane

Two-piece medium preheat cutting tips for hand cutting with FLAMEX®, propane and propane base fuel gases with oxygen.

USE IN: Cutting Assemblies — PIPELINER MC505, MC509; AIRLINE AC305, AC309

Tip Number	Cutting Range
MC40-0	Up to $\frac{3}{8}$ "
MC40-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
MC40-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
MC40-3	$1\frac{1}{2}$ " - 2"
MC40-4	$2\frac{1}{2}$ " - 3"



MC40 Series
Oxy-FLAMEX®, Propane

Tip Number	Cutting Range
MC60-0	Up to $\frac{3}{8}$ "
MC60-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
MC60-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
MC60-3	$1\frac{1}{2}$ " - 2"
MC60-4	$2\frac{1}{2}$ " - 3"



MC60 Series
Oxy-HPG®, Propylene

Tip Number	Cutting Range
MC90-0	Up to $\frac{3}{8}$ "
MC90-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
MC90-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
MC90-3	$1\frac{1}{2}$ " - 2"
MC90-4	$2\frac{1}{2}$ " - 3"



MC90 Series
Oxy-MAPP®



CUTTING TIPS NWSA 220

"SC" ACETYLENE CUTTING TIPS—Heavy Duty

SC10 Series



4 PREHEATS

Tip Number	Cutting Range
SC10-0	1/4" - 3/8"
SC10-1	1/2" - 5/8"
SC10-2	3/4" - 1 1/4"
SC10-3	1 1/2" - 2"
SC10-4	2 1/2" - 4"

SC10 Series

Oxy-Acetylene

Four preheat general purpose hand cutting tips. Larger size preheat orifices are preferred by many for hand cutting.

USE IN: Cutting Assemblies—SILVER STAR, PIPEWELDERS' SPECIAL, PIPELINER MC409
Cutting Torches—SILVER STAR and "TUF TONY"

SC12 Series



6 PREHEATS

SC12-000	1/8"
SC12-00	5/16"
SC12-0	1/4" - 3/8"
SC12-1	1/2" - 5/8"
SC12-2	3/4" - 1 1/4"
SC12-3	1 1/2" - 2"
SC12-4	2 1/2" - 4"
SC12-5	5" - 8"
SC12-6	10" - 12"
SC12-7	12" - 14"

SC12 Series

Oxy-Acetylene

Six preheat cutting tips for general hand and machine cutting. Provides excellent preheat characteristics required for machine cutting.

USE IN: Cutting Assemblies—SILVER STAR (Max. size SC12-5), PIPEWELDERS' SPECIAL (Max. size SC12-4), PIPELINER MC409 (Max. size SC12-4)
Cutting Torches—SILVER STAR, "TUF TONY"
Machine Cutting Torches—SC770, SC771, SC780A, SC781A and SC782A

EXTRA-LONG TIPS



SC12-1	1/2" - 5/8"
SC12-2	3/4" - 1 1/4"
SC12-3	1 1/2" - 2"
SC12-4	2 1/2" - 4"

Extra / Long Tips

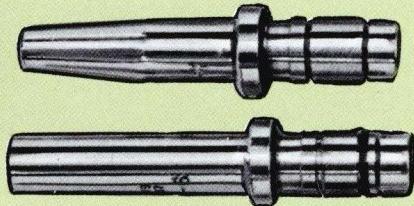
Oxy-Acetylene

Six preheat tips with extra length for hard-to-reach areas. Straight tip is standard. Bent tip available, maximum bend is 90° and no closer than 1 1/2" from flame end. Available in four lengths—6", 9", 12" and 18".

TO ORDER . . . specify tip size and length

CUTTING TIPS

HEAVY DUTY CUTTING



SCH-1	1/2" - 5/8"
SCH-2	3/4" - 1 1/4"
SCH-3	1 1/2" - 2"
SCH-4	2 1/2" - 4"
SC56-5	5" - 8"
SC56-6	9" - 12"
SC56-7	12" - 14"
SC56-8	14" - 18"
SC56-9	18" - 24"

SCH / SC56 Series

Oxy-Acetylene

HEAVY PREHEAT cutting tips designed for heavy duty cutting and thick steel sections up to 24".

USE IN: Cutting Torches—SILVER STAR (Max. size SC56-6), "TUF TONY" (all sizes)
Machine Torches—SC770, SC771 (Max. size SC56-6), SC780A, SC781A, SC782A (all sizes)

"LC" ACETYLENE CUTTING TIPS—Screw-In Style

LC-4 Series



4 PREHEATS

Tip Number	Cutting Range
LC0-4	1/8" - 3/8"
LC1-4	1/2" - 5/8"
LC2-4	3/4" - 1 1/4"
LC3-4	1 1/2" - 2"
LC4-4	3" - 4"

LC-4 Series

Oxy-Acetylene

Four preheat cutting tips for general hand cutting. Light preheat.

USE IN: Cutting Assemblies—LC305, LC309
Cutting Torches LC445, LC445S, LC449, LC449S, LC625 and LC629



6 PREHEATS

LC0-6	1/8" - 3/8"
LC1-6	1/2" - 5/8"
LC2-6	3/4" - 2"
LC3-6	3" - 4"
LC4-6	5" - 8"
LC5-6	9" - 12"
LC6-6	12" - 14"

LC-6 Series

Oxy-Acetylene

Six preheat cutting tips. Provides heavy preheat for fast cutting or for dirty, rusty metal.

USE IN: Cutting Assemblies LC305, LC309 (Max. size LC4-6)
Cutting Torches LC445, LC445S, LC449, LC449S, LC625 and LC629 (all sizes)

"SC" SPECIAL PURPOSE TIPS—HEAVY DUTY**Gouging Tip****Oxy-Acetylene**

Remove old welds or cracks or veeing and groove cutting. Use 20 PSI oxygen and 5 PSI acetylene for SC13-1 and SC13-3 tips. Use 25 PSI oxygen and 6 PSI acetylene for SC13-5.

THIS "USE" INFORMATION APPLIES TO ALL TIPS ON THIS PAGE.

USE IN: Cutting Assemblies—SILVER STAR, PIPEWELDERS' SPECIAL, PIPELINER MC409 (Max. size tip—#3)
Cutting Torches—SILVER STAR and "TUF TONY"
(All sizes)

Tip Number	Range
SC13-1	1/8" x 1/4"
SC13-3	1/4" x 3/8"
SC13-5	3/8" x 1/2"



GOUGING



RIVET CUTTING

RIVET BLOWING
AND METAL WASHING

RISER CUTTING



PLATE CUTTING



BENT CUTTING TIP



"STUBBY" TIP



WELDING



HEATING

Rivet Cutting**Oxy-Acetylene**

Cuts heads of bolts and rivets. Can also be used in 180° head cutting torch to cut out boiler tubes. Use 35-45 PSI oxygen pressure and 4 PSI acetylene for SC14-1, and 5 PSI acetylene for SC14-3.

SC14-1	3/4"
SC14-3	Rivets 1 1/2" Rivets 1/2"

**Rivet Blowing & Metal Washing****Oxy-Acetylene**

Removes lots of metal fast. Heavy preheat. Primarily a rivet blowing tip but can be used for metal washing, gouging, veeing and groove cutting. Use 25 PSI oxygen and 4 PSI acetylene for SC15-1. Use 30 PSI oxygen and 5 PSI acetylene for SC15-2.

SC15-1	1/4" - 3/8"
SC15-2	3/8" - 1/2"

Riser Cutting**Oxy-Acetylene**

Extra heavy duty tip for removing gates and risers from steel castings. Heavy preheat. Use with 35-40 PSI oxygen and 4 PSI acetylene.

SC16-4	2" - 5"
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Plate Cutting**Oxy-Acetylene**

"Drag" style step tip cuts thin sheet metal with absolute minimum burn over and plate warpage. Use 20 PSI oxygen and 3 PSI acetylene for sizes 00 and 0. Use 30 PSI oxygen and 3 PSI acetylene for SC17-2.

SC17-00	1/8" - 1/4"
SC17-0	3/8"
SC17-2	3/4" - 1 1/4"

Bent Cutting Tip**Oxy-Acetylene**

Use in 180° head cutting torch to get into tight places as in flue cutting and similar applications. Use 35-40 PSI oxygen pressure and 4 PSI acetylene.

SC80-1	Up to 5/8"
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"Stubby" Cutting Tip**Oxy-Acetylene**

Use in 75° or 90° head torches when cutting clearance is at a minimum. Use 35-40 PSI oxygen pressure and 4 PSI acetylene.

SC81-1	Up to 5/8"
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Welding**Oxy-Acetylene**

A unique feature expanding the utility of hand cutting torches. Ideal for users whose primary work is cutting but have an occasional welding job. Use with 8 PSI oxygen and acetylene.

SCW107	Up to 5/8"
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Heating**Oxy-Acetylene**

Delivers large volume of heat quickly for bending, straightening, shrinking, forming and other heating applications. Use with 10 PSI oxygen and acetylene. Flow of 86 CFH requires manifolding of two cylinders.

SC110	123,238 BTU's
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CUTTING
TIPS

"SC" FLAMEX®, PROPANE (and other propane based fuel gas) TIPSSC40 Series
Medium Preheat

Tip Number	Cutting Range
SC40-0	Up to $\frac{3}{8}$ "
SC40-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
SC40-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
SC40-3	$1\frac{1}{2}$ " - 2"
SC40-4	$2\frac{1}{2}$ " - 4"
SC40-5	5" - 8"
SC40-6	10" - 12"

SC40 Series

Two-piece medium preheat cutting tips for general hand and machine cutting with FLAMEX®, propane, and propane base fuel gases.

USE IN: See listing for SC50 series tips on this page.

"SC" PROPANE, NATURAL GAS CUTTING TIPS — Heavy DutySC50 Series
Heavy Preheat

SC50-00	$\frac{1}{8}$ " - $\frac{3}{16}$ "
SC50-0	$\frac{1}{4}$ " - $\frac{3}{8}$ "
SC50-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
SC50-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
SC50-3	$1\frac{1}{2}$ " - 2"
SC50-4	$2\frac{1}{2}$ " - 4"
SC50-5	5" - 8"
SC50-6	10" - 12"
SC50-7	13" - 14"
SC50-8	15" - 18"
SC50-9	19" - 20"

General and Heavy Cutting

Oxy-Propane
Oxy-Nat'l Gas

A heavy preheat (sizes #1-#9) two piece cutting tip series for hand and machine cutting up to 20" thick steel.

USE IN: Cutting Assemblies — SILVER STAR (Max. tip size #5), PIPEWELDERS' SPECIAL (Max. tip size #5), Cutting Torches — SILVER STAR (Max. tip size #6), "TUF-TONY" (all sizes), Machine Cutting Torches — SC770, SC771 (Max. tip size #6), SC780A, SC781A, and SC782A (all sizes).



SC46 Series

SC46-1	$\frac{5}{8}$ " - $\frac{3}{4}$ "
SC46-2	$1\frac{1}{2}$ " - $1\frac{1}{8}$ "
SC46-3	2" - 3"
SC46-4	4" - 5"
SC46-5	6" - 8"
SC46-6	10" - 12"

One-Piece Rugged Duty Cutting

Oxy-Propane
Oxy-Nat'l Gas

One-piece cutting tips designed to withstand the abuse encountered when cutting PAINTED or GREASE covered metal.

USE IN: Cutting Assemblies—SILVER STAR, PIPEWELDERS' SPECIAL, Cutting Torches—SILVER STAR, "TUF TONY"

SC21A Series
High Speed Machine Cutting

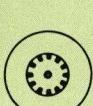
SC21A-1	$\frac{1}{4}$ " - $\frac{3}{8}$ "
SC21A-2	$\frac{1}{2}$ " - 1"
SC21A-3	$1\frac{1}{4}$ " - $1\frac{1}{2}$ "
SC21A-4	2" - $2\frac{1}{2}$ "
SC21A-5	3" - 4"

High Speed Machine Cutting

Oxy-Propane
Oxy-Nat'l Gas

The SC21A two-piece tips cut steel approximately 20% faster than conventional propane and natural gas tips.

USE IN: Machine Cutting Torches — SC770, SC771, SC780A, SC781A and SC782A

"SC" PROPANE SPECIAL PURPOSE TIPS — Heavy DutySC18A
45° Bevel
Cutting

SC18A PLUS—	45° Bevel Range
SC50A-1B	$\frac{1}{4}$ " - $\frac{3}{8}$ "
SC50A-2B	$\frac{1}{2}$ " - $\frac{5}{8}$ "
SC50A-3B	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
SC50A-4B	$1\frac{1}{2}$ " - $2\frac{1}{2}$ "

Machine Bevel Cutting

Oxy-Propane

Bevel cutting tip assembly. For left hand travel. Order SC18A bevel assembly PLUS one of the brass mixing sections shown in the left hand column. Preheat tip end #1324 supplied with SC18A is also available as a spare part.

USE IN: Machine Cutting Torches — SC770 and SC780 series

RIVET WASHING

GOUGING

RIVET CUTTING

HEATING

Tip Number	Range
SC22-2	$\frac{1}{8}$ " - $\frac{1}{2}$ "

Rivet Washing and Metal Blowing

Oxy-Propane

Removes metal quickly. Use for blowing rivets, gouging, grooving, "J" grooving and metal washing. Propane pressure 12 PSI, oxygen 65 PSI.

SC23-3	$\frac{1}{4}$ " deep x $\frac{3}{8}$ " wide
SC23-5	$\frac{3}{8}$ " deep x $\frac{1}{2}$ " wide

Gouging

Oxy-Propane

For removing old welds or cracks, for veeing or groove cutting. LP-Gas 6-10 PSI and 20-30 PSI oxygen.

SC24-1	Up to $\frac{5}{8}$ "
SC24-3	Up to 2"

Rivet and Bulkhead Cutting

Oxy-Propane

For cutting rivet heads and bolts. Stainless steel "shoe" provides extra long life. Use 6-10 PSI LP-Gases and 35-50 PSI oxygen.

SC112	143,000 BTU's
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Heating

Oxy-Propane

Provides lots of heat fast with economical LP-Gas and oxygen. Use with LP-Gas 22-25 PSI and 52-60 PSI oxygen.

USE IN: Cutting Assemblies—SILVER STAR, Cutting Torches—SILVER STAR and TUF TONY

"SC" MAPP® CUTTING TIPS—Heavy Duty

SC56 Series for General Hand Cutting

One-piece design provides excellent performance under rough cutting conditions.

USE IN: Cutting Assemblies—SILVER STAR, PIPEWELDERS' SPECIAL (max. tip size SC56-5), PIPELINER MC409 (max. tip size SC56-4); Cutting Torches—SILVER STAR (max. tip SC56-6), TUF TONY (all sizes)

Oxy-MAPP®

Tip Number	Cutting Range
SC56-00	3/16"
SC56-0	1/4" - 3/8"
SC56-1	1/2" - 5/8"
SC56-2	3/4" - 1 1/4"
SC56-3	1 1/2" - 2"
SC56-4	2 1/2" - 4"
SC56-5	5" - 8"
SC56-6	9" - 12"
SC56-7	13" - 14"
SC56-8	15" - 18"
SC56-9	19" - 24"



SC56 Series
ONE-PIECE

SC90 Series for Hand and Machine Cutting

Two-piece medium preheat cutting tips designed to provide optimum performance with Airco MAPP® or Liquid Air Fuel-Gas.

USE IN: Cutting Assemblies — SILVER STAR, PIPEWELDERS' SPECIAL, PIPELINER MC409 (All — max. tip size #5); Cutting Torches — SILVER STAR, "Tuf-Tony", (all sizes).

Oxy-MAPP®

SC90-0	Up to 3/8"
SC90-1	1/2" - 5/8"
SC90-2	3/4" - 1 1/4"
SC90-3	1 1/2" - 2"
SC90-4	2 1/2" - 4"
SC90-5	5" - 8"
SC90-6	10" - 12"



SC90 Series
Medium Preheat

"SC" MAPP® SPECIAL PURPOSE TIPS—Heavy Duty

Plate Cutting

Oxy-MAPP

"Drag" type step tip cuts thin sheet metal with minimum edge burnover and warpage. Use MAPP at 3 PSI and 20 PSI oxygen.

Metal Washing and Rivet Blowing

Oxy-MAPP

Removes metal quickly. Use for metal washing, rivet blowing, and can also be used for gouging, grooving, and "J" grooving. Use 12 PSI MAPP and 65 PSI oxygen.

Gouging

Oxy-MAPP

Use to remove old welds or cracks, for veeing or groove cutting. Heavy preheat. Fuel gas pressure 6-10 PSI and 20-30 PSI oxygen.

Rivet and Bulkhead Cutting

Oxy-MAPP

Cuts off rivet heads and bolts. Stainless steel "shoe" increases tip life. Fuel gas pressure 6-10 PSI and 35-50 PSI oxygen.

Heating

Oxy-MAPP

Provides large volumes of fast heat for a wide range of heating applications including bending, straightening, forming, etc. Use 10 PSI fuel pressure and 25 PSI oxygen.

SC17-0M Up to 3/8"

SC22-2M 1/8" - 1/2"

SC23-3M 1/4" deep
x 3/8" wide

SC24-3M Up to 2"

SC113 71,400
BTU's



PLATE CUTTING



METAL WASHING



GOUGING



RIVET CUTTING



HEATING

"LC" SERIES LP-GAS CUTTING TIPS—Heavy Duty (Screw-In Style)

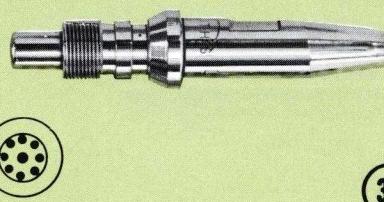
LC46 Series

Oxy-LP Gases

One piece tip for general hand cutting with low cost fuel gas. Use same pressure as SC46 series.

USE IN: Cutting Assemblies—LC305, LC309; Cutting Torches —LC445, LC449, LC445S, LC449S, LC625, LC629

LC46-1	5/8" - 3/4"
LC46-2	1" - 1 1/2"
LC46-3	2" - 3"
LC46-4	4" - 5"
LC46-5	6" - 8"
LC46-6	10" - 12"





**Low Pressure
Natural Gas**

CUTTING TIPS NWSA 220

"SC" INJECTOR STYLE CUTTING TIPS—Heavy Duty



SC28 Series
FAST PREHEAT



SC31 Series
GENERAL PURPOSE

Tip Number	Cutting Range
SC28-1	1/2" - 5/8"
SC28-2	3/4" - 1 1/2"
SC28-3	1 1/2" - 2 1/2"
SC28-4	3" - 4"

SC28 Fast Preheat Series Low Pressure Natural Gas

For hand cutting of dirty, scaly metal and fast starting cuts. Two-piece tips for use with low pressure Natural Gas, Manufactured Gas, City Gas, LP-Gases (butane, propane, etc.) and medium pressure Natural Gas.

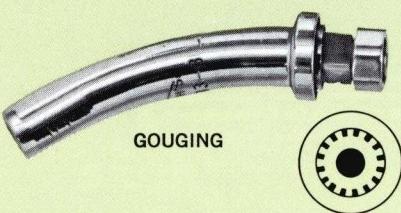
USE IN: Cutting Torches (Injector Style)—SC840, SC845, SC849

General Hand and Machine Cutting Low Pressure Natural Gas

Excellent performing general purpose two-piece tips for use with low pressure Natural Gas, Manufactured Gas, City Gas, LP-Gases (propane, butane, etc.) and medium pressure Natural Gas.

USE IN: Cutting Torches (Injector Style)—SC840, SC845, SC849
Machine Cutting Torch—SC791A

"SC" INJECTOR STYLE SPECIAL PURPOSE TIPS—Heavy Duty



GOUGING



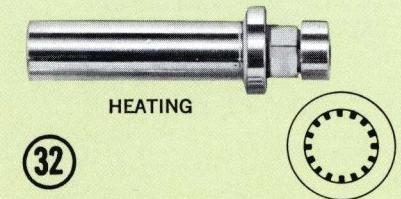
RIVET CUTTING



RIVET BLOWING



SC36A
45° Bevel Cutting



HEATING

SC33-3	1/4" deep x 3/8" wide
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Gouging Low Pressure Natural Gas

Heavy preheat two-piece tip removes old welds or defects, also for groove cutting. Bent at 30° angle. Use 30 PSI oxygen pressure and 3.5 oz. per sq. in. of natural gas and up.

USE IN: Cutting Torches—SC840, SC845, SC849

SC34-3	Up to 1 1/2"
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Rivet Cutting Low Pressure Natural Gas

For cutting off the heads of rivets and bolts. Can also be used with 180° head cutting torches to cut out boiler tubes. Use 35-45 PSI oxygen and 3.5 oz. per sq. in. natural gas and up.

USE IN: Cutting Torches—SC840, SC845, SC849

SC35-2	3/8" - 1/2"
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Rivet Blowing and Metal Washing Low Pressure Natural Gas

Removes lots of metal quickly. Heavy preheat rivet blowing tip can also be used for metal washing, gouging, veeing and groove cutting. Use 35 PSI oxygen and 3.5 oz. per sq. in. of natural gas and up.

USE IN: Cutting Torches—SC840, SC845, SC849

SC36A PLUS —	45° Bevel Range
SC31-1B	1/4" - 3/8"
SC31-2B	1/2" - 5/8"
SC31-3B	3/4" - 1 1/4"
SC31-4B	1 1/2" - 2 1/2"

Machine Bevel Cutting Low Pressure Natural Gas

Cuts high quality 45° bevels on left hand travel. Order SC36A bevel tip assembly PLUS one of the brass mixing sections shown in the left hand column. Preheat tip end #1324 supplied with SC36A is also available as a spare part.

USE IN: Machine Cutting Torch—SC791A

SC111	47,736 BTU's Nat'l Gas
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Heating Low Pressure Natural Gas

Two-piece tip provides high volumes of heat using low cost fuel gas. Useful in various heating applications including bending, straightening, forming and many others. Use 55-65 PSI oxygen and natural gas at 3.5 oz. per sq. in. and above.

USE IN: Cutting Torches—SC840, SC845, SC849

"SC" HPG®, PROPYLENE CUTTING TIPS—Heavy Duty**SC60 Series, Hand and Machine Cutting**

Two-piece medium preheat cutting tips designed to provide optimum performance with propylene or propylene based fuel gases including:

HPG®, LIQUI-FUEL®, B-PLUS™, B.T.U., HEF®,
Gulf HP, APACHI®, CHEM-O-LENE®.

USE IN: Cutting Assemblies — SILVER STAR (Max. tip size #5), PIPEWELDERS' SPECIAL (Max. tip size #5), PIPELINER MC409 (Max. tip size #5); Cutting Torches — SILVER STAR and "Tuf-Tony" (all sizes).

Tip Number	Cutting Range
SC60-0	Up to $\frac{3}{8}$ "
SC60-1	$\frac{1}{2}$ " - $\frac{5}{8}$ "
SC60-2	$\frac{3}{4}$ " - $1\frac{1}{4}$ "
SC60-3	$1\frac{1}{2}$ " - 2"
SC60-4	$2\frac{1}{2}$ " - 4"
SC60-5	5" - 8"
SC60-6	10" - 12"



SC60 Series
Medium Preheat

CUTTING TIP DATA

Complete cutting tip data will be found in the Technical Section starting on page 64.

EXTRA SAFETY AND PERFORMANCE

H1500 series single stage regulators comprise a complete line of new versatile regulators for welding, cutting, heating and other industrial applications. Heavy duty construction and new simplified design provides longer trouble-free operation.

① SENSITIVE DIAPHRAGM

Large nylon impregnated Buna-N diaphragm used for flexibility and strength. Diaphragm has 6.44 square inch ACTIVE area.

② STAINLESS NOZZLES

High quality stainless steel used for its long wearing and corrosion resistance qualities.

③ SELF-CLEANING SEAT

Elastomer seat sluffs off dust and dirt. Eliminates a common cause of seat leaks.

④ DOUBLE FILTERS

Provides double protection, extra safety. Sintered bronze inlet filter and seat shrouding filter screen guard against dust and other impurities which can cause dangerous seat ignition.

⑤ CONVERTS TO 2-STAGE

Simply add one of Smith's unique two-stage modules to H1500 single stage cylinder regulator to convert it to a heavy duty TWO-STAGE regulator.

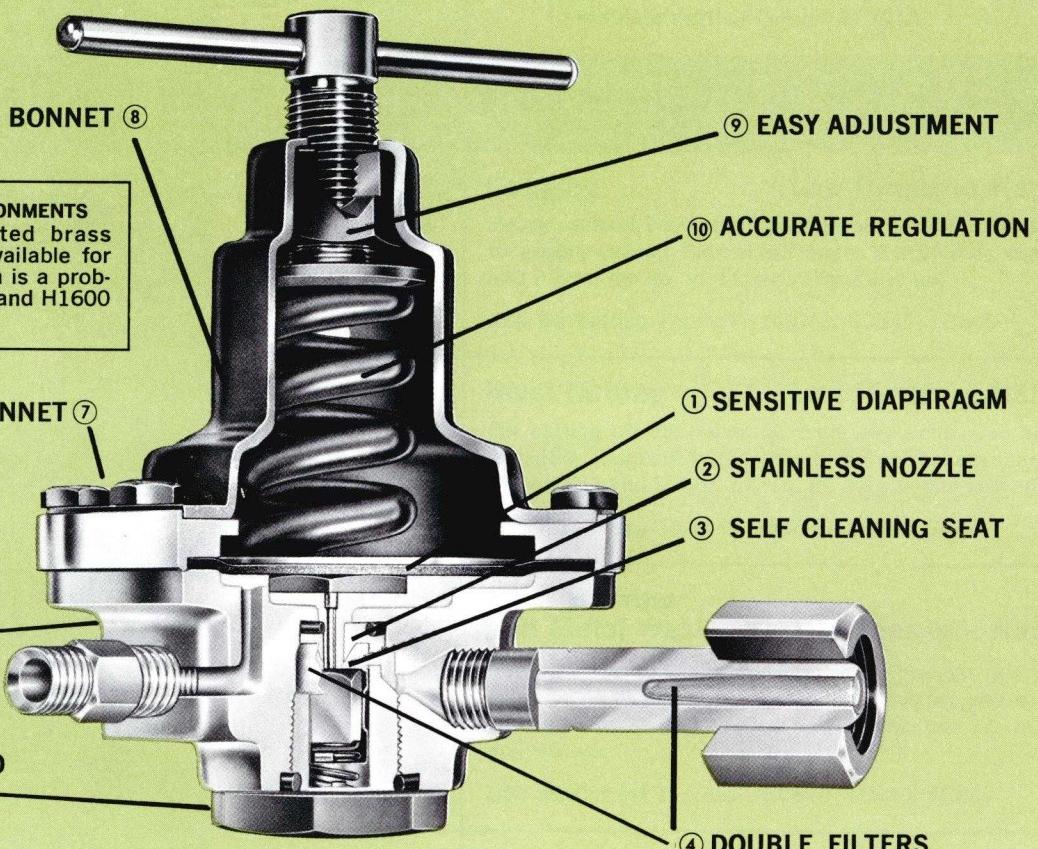
RUGGED STEEL BONNET ⑧

CORROSIVE ENVIRONMENTS
Special nickel-plated brass bonnets, #7234, available for use where corrosion is a problem. Fits all H1500 and H1600 Series regulators.

BOLTED ON BONNET ⑦

(UL) LISTED

CONVERTS TO 2-STAGE ⑤



⑥ (UL) LISTED

All H1500 series are LISTED BY UNDERWRITERS' LABORATORIES, INC. with the oxygen cylinder regulators listed for up to 3000 PSI INLET PRESSURE. Provides an extra margin of safety. All regulators feature tough, forged brass bodies.

⑦ BOLTED-ON BONNETS

Cadmium plated hex bolts add corrosion resistance, extra-strength and allow easy removal of bonnet for regulator maintenance. Prevents distortion, holds diaphragm securely, maintains seal.

⑧ RUGGED STEEL BONNET

Drawn heavy gauge steel bonnet, rust-proofed inside and out with electrostatically baked color coded finish.

⑨ EASY PRESSURE ADJUSTMENT

Quality adjusting screw turns smoothly with less wear in self-lubricating nylatron and ledloy inserts.

⑩ ACCURATE REGULATION

Smith's has carefully matched material and design qualities to produce a regulator with excellent regulation characteristics, safe operation and greater flow capacity enabling welding, cutting and heating torches to work safer and up to their maximum capacity. The H1500 series uses carefully computed ratio of diaphragm area to nozzle orifice balanced with strong spring force to deliver high flow capacity and sensitive regulation. Precision ground spring ends assure accurate alignment of seat and nozzle.

H1500 SERIES REGULATORS - Heavy Duty

Oxygen Regulators

- H1510-540 All purpose regulator for welding and cutting.
 H1511-540 Cutting regulator. Provides higher outlet pressure required in cutting operations.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1510-540	0-150 PSI	4000 PSI	200 PSI	CGA540	H138 ("B")
H1511-540	0-275 PSI	4000 PSI	400 PSI		½"-18 R.H.

Acetylene and MAPP® Regulators

- H1520-300 Acetylene regulator with CGA300 inlet connection.
 H1521-510 Acetylene and Mapp® regulator with CGA510 connection.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1520-300	0-15 PSI	400 PSI	30 PSI	CGA300	H137 ("B")
H1521-510	0-15 PSI	400 PSI	30 PSI	CGA510	½"-18 L.H.

L-P Gas Regulator

- H1522-510 LP-Gas regulator has CGA510 inlet connection and outlet pressure range up to 50 PSI.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1522-510	0-50 PSI	400 PSI	60 PSI	CGA510	½"-18 L.H.

Other Gases

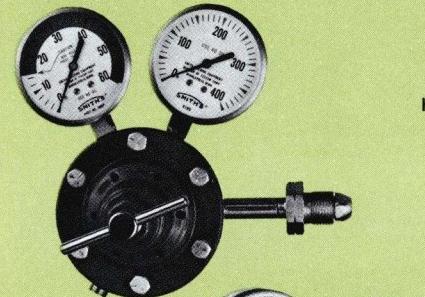
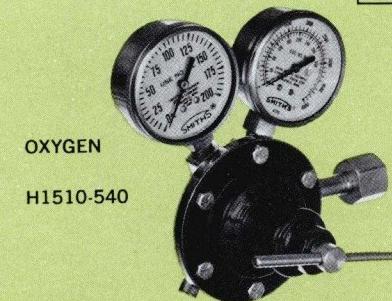
- H1530-580 Nitrogen regulator with CGA580 inlet connection.
 H1532-350 Hydrogen regulator with CGA350 inlet connection.
 H1533-320 Carbon dioxide regulator with CGA320 connection.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1530-580	0-275 PSI	4000 PSI	400 PSI	CGA580	H138 ("B") ½"-18 R.H.
H1532-350	0-150 PSI	4000 PSI	400 PSI	CGA350	H137 ("B") ½"-18 L.H.
H1533-320	0-150 PSI	4000 PSI	400 PSI	CGA320	H138 ("B") ½"-18 R.H.

HIGH PRESSURE REGULATORS

Master regulator provides high delivery pressures and medium flows. Self-relieving regulator vents downstream pressure through the regulator.

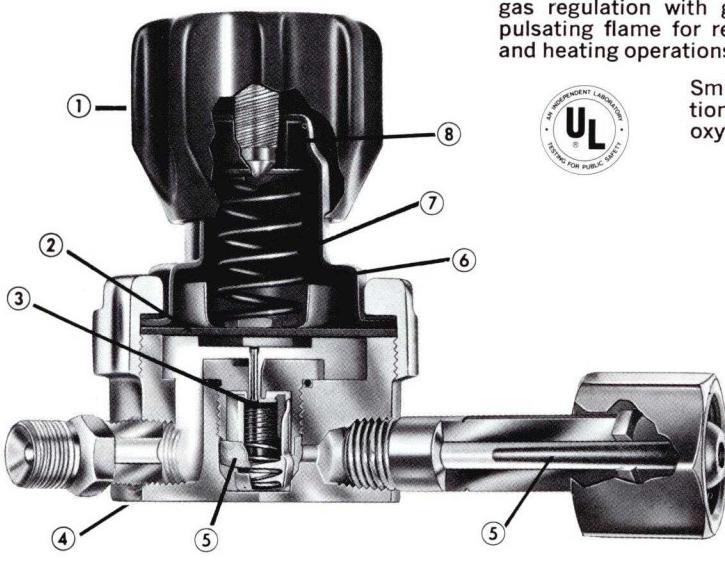
Stock Number	Delivery Pressure	Gas Service	Inlet Connection	Outlet Connection
H1880-540	0-600 PSI	Oxygen	CGA540	¼" NPT
H1881-540	0-1000 PSI	Oxygen	CGA540	Internal
H1882-580	0-600 PSI	Air, Argon, Helium, Nitrogen	CGA580	
H1883-580	0-1000 PSI		CGA580	





SINGLE STAGE REGULATORS NWSA 230

H1700 SERIES SINGLE STAGE REGULATORS



Newly designed H1700 Series regulators provide more accurate, more dependable gas regulation with greater capacity for most work. Provides a constant non-pulsating flame for regular and fine welding with large flow capacity for cutting and heating operations.

Smith's H1700 Series regulators are listed under the reexamination service of Underwriters' Laboratories, Inc. The H1710-540 oxygen regulator is listed for inlet pressures UP TO 3,000 PSIG.

- 1 Large color coded knob provides fast, accurate pressure settings.
- 2 Sensitive neoprene rubber diaphragm responds quickly to pressure changes.
- 3 New elastomer seat has self-cleaning action, sluffs off dirt and dust . . . eliminates common cause for seat replacement.
- 4 Solid brass body, heavy bonnet ring and steel bonnet assure complete safety at normal welding and cutting pressures.
- 5 Extra safety of DOUBLE FILTERS. Internal filters as well as inlet filter provide extra protection.
- 6 Rugged steel bonnet is rust-proofed inside and out with baked enamel finish. Color coded: green for oxygen and red for fuel gases.
- 7 Adjusting spring ends are ground for squareness to assure alignment of seat and nozzle.
- 8 Self-lubricating Ledoy steel insert for smooth pressure setting.

H1700 SERIES REGULARS—Medium Duty

REGULATORS



Oxygen Regulator

H1710-540 All purpose welding and cutting regulator with CGA540 inlet connection.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1710-540	0-100 PSI	4000 PSI	150 PSI	CGA540	1/8"-18 R.H.

Acetylene and MAPP® Regulators

H1720-300 Acetylene regulator with CGA300 inlet connection.
H1721-510 Acetylene and Mapp® regulator with CGA510 connection.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1720-300	0-15 PSI	400 PSI	30 PSI	CGA300	H137 "B"
H1721-510	0-15 PSI	400 PSI	30 PSI	CGA510	1/8"-18 L.H.

LP-Gas Regulators (Propane, butane, etc.)

H1722-510 LP-Gas regulator with 50 PSI delivery pressure.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1722-510	0-50 PSI	400 PSI	60 PSI	CGA510	1/8"-18 L.H.

H1900 SERIES SINGLE STAGE REGULATORS

Modern, compact regulator provides accurate control of oxygen and fuel gases for welding, cutting and heating operations. Delivers gas flows sufficient for efficient operation of any Smith's tip. Easy turning color-coded knobs provide easy pressure adjustment. Oxygen regulator is listed by Underwriters' Laboratories Inc. for inlet pressures up to 3,000 PSIG.

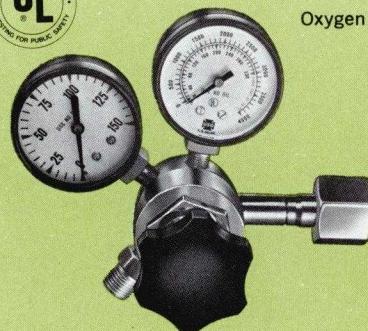
Oxygen Regulator

H1910-540 General purpose regulator with outlet pressure range up to 100 PSI.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1910-540	0-100 PSI	4000 PSI	150 PSI	CGA 540	1/8"-18 R.H.



H1910-540
Oxygen



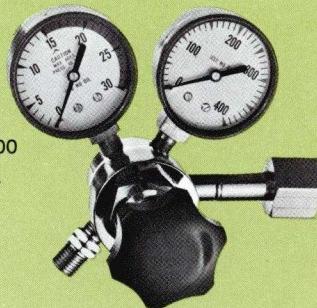
Acetylene and MAPP® Regulators

H1920-300 Acetylene regulator with CGA300 inlet connection.

H1921-510 Acetylene and Mapp® regulator with CGA510 connection.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1920-300	0-15 PSI	400 PSI	30 PSI	CGA300	H137 "B"
H1921-510	0-15 PSI	400 PSI	30 PSI	CGA510	1/8"-18 L.H.

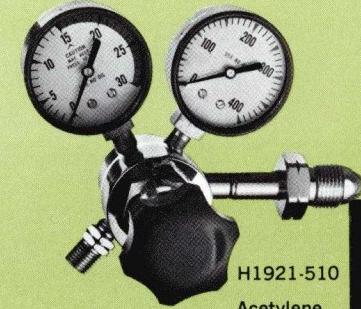
H1920-300
Acetylene



LP-Gas Regulators (Propane, butane, etc.)

H1922-510 LP-Gas regulator with CGA510 connection.

Stock Number	Delivery Pressure	Gauges (2" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1922-510	0-50 PSI	400 PSI	60 PSI	CGA510	1/8"-18 L.H.



H1921-510
Acetylene

MEDICAL OXYGEN REGULATORS

H1709-540 MEDICAL OXYGEN THERAPY REGULATOR



Used by hospitals, police and fire departments, and industrial safety departments for emergency administration of oxygen. Polished nickel finish. Large knob provides smooth fingertip action. Outlet gauge reads in liters per minute.

#541 HUMIDIFIER. Available as an optional accessory. Chromium plated nasal humidifier with audible pressure relief valve, porostone filter diffuser and unbreakable plastic bottle. Replacement porostone filter . . . #541-1. Replacement plastic bottle . . . #541-2.

Stock Number	Gas Service	Delivery Flow Range	Inlet Connection	Outlet Connection
H1709-540	Medical Oxygen	0-15 Liters per Minute	CGA540	1/8"-18 R.H. ("B")



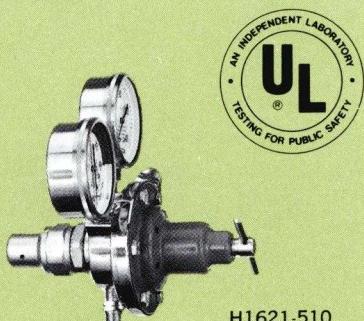


TWO STAGE REGULATORS NWSA 230

H1600 SERIES TWO STAGE REGULATORS—Heavy Duty



H1610-540



H1621-510

Oxygen Regulators

H1610-540 All purpose regulator for welding and cutting.

H1611-540 Cutting regulator. Provides higher outlet pressure required in cutting operations.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1610-540	0-150 PSI	4000 PSI	200 PSI	CGA540	H138 ("B") ¾"-18 R.H.
H1611-540	0-275 PSI	4000 PSI	400 PSI		

Acetylene and LP-Gas Regulators

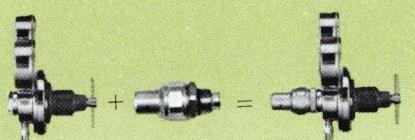
H1620-300 Acetylene regulator with CGA300 inlet connection.

H1621-510 Acetylene and Mapp® regulator with CGA510 connection.

H1622-510 LP-Gas regulator has CGA510 inlet connection and outlet pressure range up to 50 PSI.

Stock Number	Delivery Pressure	Gauges (2½" dia.)		Inlet Connection	Outlet Connection
		Inlet	Outlet		
H1620-300	0-15 PSI	400 PSI	30 PSI	CGA300	H137 ("B") ¾"-18 L.H.
H1621-510	0-15 PSI	400 PSI	30 PSI		
H1622-510	0-50 PSI	400 PSI	60 PSI		

TWO STAGE CONVERSION MODULE



Single Stage Regulator

Conversion Module

2-Stage Regulator

REGULATORS

Convert any SINGLE STAGE Smith's H1500 series cylinder regulator into a precision TWO STAGE regulator. Simply add Smith's unique two-stage conversion module. No special tools required — simply unscrew the back cap, screw in module and wrench tighten.

Module No.	Use on Smith's Regulators:
H1601	H1510-540, H1511-540, H1530-580, H1532-350, H1533-320
H1602	H1520-300, H1521-510
H1603	H1522-510

HARD HAT™ GAUGE AND REGULATOR GUARDS



Protect regulators from costly gauge replacement with Smith's HARD HAT gauge guards. Promotes SAFETY . . . prevents leaking gas caused by broken gauges. HARD HAT guard reduces breakage which can impair, even stop regulator function. You save money by reducing time lost on jobs, costly replacement of damaged gauges.

H190 HARD HAT is made from rugged steel. Bright yellow, baked enamel finish. Quickly and easily attached to regulator.

FITS: H1500 and H1600 series regulators.

H195 HARD HAT is formed from impact-resistant Lexan® resin, an extremely tough, durable poly-carbonate. Bright safety yellow finish.

FITS: H1700 regulators and previous model Econoflo® regulators.

H180 HARD HAT is made from rugged steel. Bright yellow, baked enamel finish. Quickly and easily attached to regulator.

FITS: "BB" H100 series and "BB-2" H300 series regulators.

LEXAN is a registered trademark of General Electric

SAFETY PACK AND HARD HAT™ REGULATORS

HARD HAT™ Regulators

Heavy duty single stage H1500 series regulators equipped with heavy duty 16 gauge steel HARD HAT with bright safety yellow finish. Protects regulator from bumps, knocks and broken gauges. Protects against hazardous gas loss due to broken gauge shanks. Saves on costly down-time.

SAFETY PACK Regulators

Gives same valuable protection as Hard Hat Regulators with IMPORTANT ADDED PROTECTION of safety check valves. Check valves prevent the back-flow of gas into the regulator. Prevents explosive mixture of fuel gas and oxygen in regulators. Smith's check valves give you an important safety plus as OSHA regulations increase safety requirements.

SINGLE STAGE		TWO STAGE	
SAFETY PACK Regulators	HARD HAT Regulators	SAFETY PACK Regulators	HARD HAT Regulators
H1510-540-S	H1510-540-H	H1610-540-S	H1610-540-H
	H1511-540-H		H1611-540-H
H1520-300-S	H1520-300-H	H1620-300-S	H1620-300-H
H1521-510-S	H1521-510-H	H1621-510-S	H1621-510-H
H1522-510-S	H1522-510-H	H1622-510-S	H1622-510-H

Gas Service	Delivery PSI	Inlet Conn.
Oxygen	0-150	CGA540
Oxygen	0-275	CGA540
Acet.	0-15	CGA300
Acet.	0-15	CGA510
LP-Gas	0-50	CGA510



SAFETY CHECK VALVES

Protect Any Regulator

Smith Check Valves prevent the explosive mixture of oxygen and fuel gases in regulators caused by the accidental back-flow of gases. Back-flow may occur when tip becomes clogged. Or when one cylinder empties during use, causing the higher pressure gas to back up into the other hose, and into the regulator thereby creating conditions for a regulator explosion.

Automatic Operation

Smith Check Valves automatically close when the outlet pressure drops to $\frac{1}{2}$ PSI; that is, the flow is stopped before the back-flow of gases start. Check valve opens under a positive pressure of $2\frac{1}{2}$ PSI.

Stock Number	Gas Service	Inlet	Outlet
H685A	Oxygen	$\frac{1}{8}$ "-18 RH Int.	$\frac{1}{8}$ "-18 RH Ext.
H686A	Fuel Gas	$\frac{1}{8}$ "-18 LH Int.	$\frac{1}{8}$ "-18 LH Ext.
H687	Inert Gas	$\frac{1}{8}$ "-18 Ext.	$\frac{1}{8}$ "-18 Int.

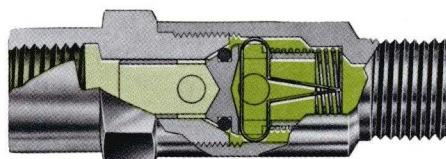


Here's How It Works — Open



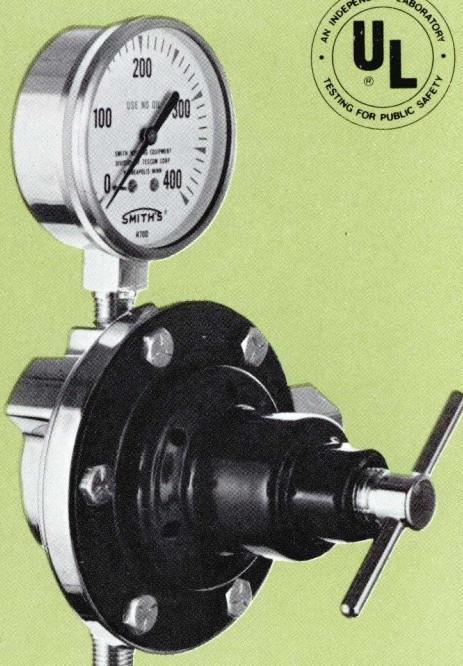
In normal operating conditions, gases flow evenly without restriction into torch.

Reverse Flow Condition — Closed



When one cylinder empties during use, high pressure gas will not back up into the other regulator.



H1500 SERIES LINE REGULATORS—Heavy Duty

H1574-540

Line Regulators—Oxygen

- H1570 Fits station valves with $\frac{1}{2}$ " NPT fitting.
 H1571-540 Fits Airco 801-0469, Linde V7, V47 valves (CGA540)
 H1572 Fits NCG #M960R, Rego #7160 and Smith's NE7160.
 H1573 Fits station valves with $\frac{1}{2}$ " NPT fitting.
 H1574-540 Fits Airco 801-0469, Linde V7, V47 valves (CGA540).
 H1575 Fits NCG #M960R, Rego #7160 and Smith's NE7160.

Stock Number	Delivery Range	Gauge (2 $\frac{1}{2}$ " Dia.)	Outlet Connection
H1570, H1571-540 H1572	0-50 PSI	H68A (60 PSI)	H138 ("B") $\frac{1}{16}$ "-18 R.H.
H1573, H1574-540 H1575	0-150 PSI	H70D (400 PSI)	

Line Regulators—Fuel Gases

- H1576 Fits station valves with $\frac{1}{2}$ " NPT fitting.
 H1577 Fits Airco #801-0468 station valve.
 H1578 Fits Linde V8 and V48 station valves.
 H1579 Fits NCG #M961R, Rego #7161 and Smith's NE7161 valves.
 H1580 LP-Gas regulator. Fits same valves as H1579 above.

Stock Number	Delivery Range	Fuel Gas	Gauge (2 $\frac{1}{2}$ " Dia.)	Outlet Connection
H1576, H1577 H1578, H1579	0-15 PSI	Acetylene or LP-Gases	H67K (30 lbs.)	H137 ("B") $\frac{1}{16}$ "-18 L.H.
H1580	0-50 PSI	LP-Gases	H68P (60 lbs.)	

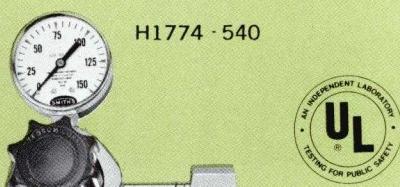
Line Regulators—Compressed Air

- H1508 Compressed air regulator with $\frac{1}{4}$ " NPT inlet.

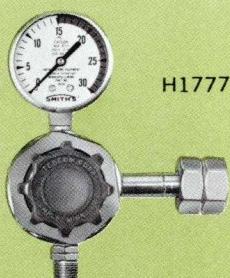
Stock Number	Delivery Range	Gauge (2 $\frac{1}{2}$ " Dia.)	Inlet	Outlet Connection
H1508	0-100 PSI	H69B (200 lbs.)	$\frac{1}{4}$ " NPT	$\frac{1}{16}$ "-18 R.H.

H1700 SERIES LINE REGULATORS—Medium Duty

REGULATORS



H1774-540



H1777



H1708

Line Regulators—Oxygen

- H1774-450 Inlet connection fits Airco 801-0469; Linde V7 and V47 station valves (CGA540).
 H1775 Inlet connection fits NCG M960R, Rego 7160 and Smith's NE7160 station valves.

Stock No.	Delivery Pressure	Gauge (2" Dia.)	Outlet Connection
H1774-540	0-100 PSI	H68N (150 lbs.)	H138 ("B") $\frac{1}{16}$ "-18 R.H.
H1775	0-100 PSI	H68N (150 lbs.)	

Line Regulators—Fuel Gases

- H1777 Inlet connection fits Airco No. 801-0468 station valve.
 H1778 Inlet connection fits Linde V8 and V48 station valves.
 H1779 Inlet connection fits NCG M961R, Rego No. 7161, and Smith's NE7161 station valves.

Stock No.	Delivery Pressure	Fuel Gas	Gauge (2" Dia.)	Outlet Connection
H1777	0-15 PSI	Acetylene or LP-Gases	H67N (30 lbs.)	H137 ("B") $\frac{1}{16}$ "-18 L.H.
H1778	0-15 PSI		H67N (30 lbs.)	
H1779	0-15 PSI		H67N (30 lbs.)	

Line Regulators—Compressed Air

- H1708 Compressed air line regulator with gauge. Inlet tapped for $\frac{1}{4}$ " pipe thread.

Stock No.	Delivery Pressure	Gauge (2" Dia.)	Outlet Connection
H1708	0-100 PSI	H68N (150 lbs.)	H138 $\frac{1}{16}$ "-18 R.H.

H1980 SERIES REGULATORS NWSA 230



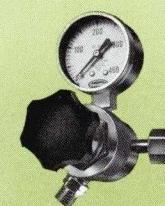
Modern, compact single stage regulators provide efficient and dependable control of fuel gases. H1980 series regulators are engineered to maximize the performance and fine flame adjustment of *Handi-Heet* soldering and heating torches.

FEATURES:

- ADJUSTABLE outlet pressure
- Large color-coded adjusting knob
- Elastomer seat has self-cleaning action. Sluffs off dirt and dust . . . eliminates a common cause of seat replacement.
- Large tank pressure gauge — 2" dia.
- Sensitive rubber diaphragm

Stock Number	Fuel Gas	Delivery Range	Inlet Connection	Fits Fuel Cylinders	Outlet Conn.
H1980-200	Acetylene	0-15 PSI	CGA200	"MC"	
H1981-300	Acetylene	0-15 PSI	CGA300	Commercial	
H1982-510	LP-Gases	0-15 PSI	CGA510	P.O.L.	
H1983-520	Acetylene	0-15 PSI	CGA520	"B" and Autolite	H137 ("B") 1/8"-18 L.H.

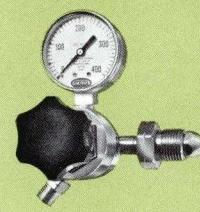
H1980-200



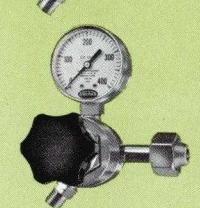
H1981-300



H1982-510



H1983-520



FLOWMETERS

Flowmeter assemblies are designed to operate at an inlet pressure of 30 PSI (H1351C at 80 PSI). They may be attached to regulators or pipeline installations. All flowmeters have 1/4" NPT female inlet. Use H1105 or H1106 adaptors to connect flowmeters to regulators or pipelines having 1/8"-18 R.H. male threads.

1. Flow tube is extra long, back pressure compensated and is accurate to within 2% of the full scale reading. All tubes are made of stress-relieved Pyrex glass.
2. Flow tube has a unique ball guide which centers the ball float in the flow tube and keeps it centered. A ball float in a non-centering tube allows the ball to float off-center and will result in GREATER flows than the reading indicates.

Flowmeter No.	Flow Range	For Gas	Tube No.	Inlet Thread	Outlet Thread
H1101B	0-60 SCFH	Argon	H1101-1	1/4" NPT Female	5/8"-18 R.H. Internal
H1312B	0-60 SCFH	Helium	1870		
H1351C	0-100 SCFH	CO ₂	7086		
H1251B	0-60 SCFH	CO ₂	1263		
H1226B	0-5 SCFH	Oxygen	3064		
H1230B Selec-O-Gas	Various	Various	3444		

FLOW LIMITING KNOB — H1101-21

Knob has special limiting device to lock flow at desired flow setting. Saves valuable gases and insures constant weld quality. Fits any Smith's flowmeter.

FLOWMETER ADAPTORS

H1105 adapts all of the above flowmeters to regulator or pipelines which have outlets on horizontal axis. Adaptor has 1/8"-18 R.H. female threads on inlet end and 1/4" NPT male threads on outlet.

H1106 Same as above but used with regulators or pipelines which have outlets 90° to the horizontal axis.

H1107 adapts "B" model flowmeters to permit the use of hose connections with 1/8"-18 R.H. internal thread.

H1101-B



H1101-21



H1107



H1105

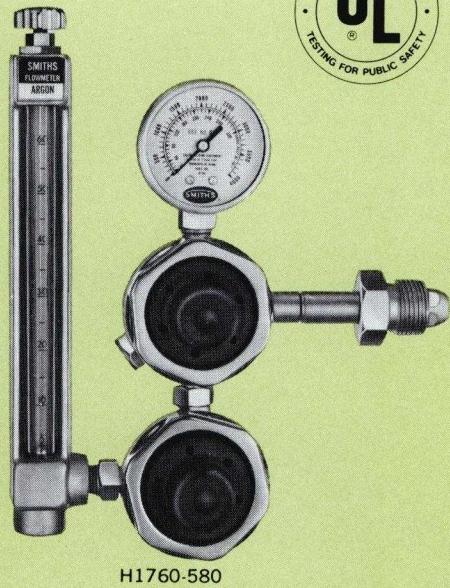


Flowmeter Adaptors

REGULATORS



TWO STAGE FLOWMETER REGULATORS NWSA 230



H1760-580



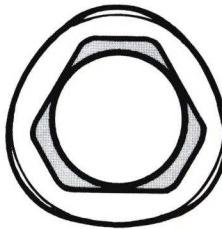
REGULATORS THAT PAY FOR THEMSELVES! By saving as little as 1 cubic foot per hour of Helium or Argon, SMITH'S regulator will pay for itself in 17 weeks. In most cases it will save more.

SMITH'S "H1760" Series regulators feature TWO-STAGE REGULATION for maximum accuracy in the control of EXPENSIVE argon and helium gases commonly used in the shielded inert welding operations.

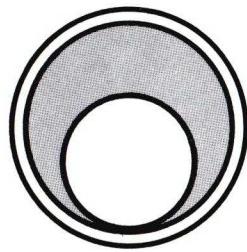
Regulators give exactly the flow of gas set on the Flowmeter tube. No expensive gas waste. Accuracy is achieved by:

1. Proven superiority of two-stage regulation in maintaining the absolute outlet pressure and flows with varying inlet pressure.
2. FLOW TUBE is extra long, back pressure compensated and is accurate to within 2% of the full scale reading.
3. FLOWMETER TUBE has a unique ball guide which centers the ball float in the flow tube and keeps it centered. (A ball float in a non-centering tube allows the ball to float off center and will result in LARGER flows than the reading indicates.)

Smith's exclusive self-centering design gives the ball free up and down motion but assures correct centering.



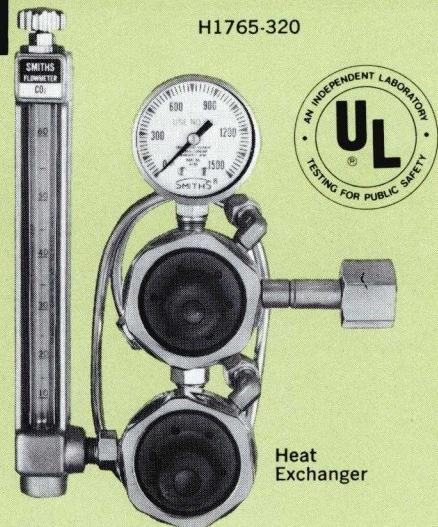
Without Smith's self-centering feature the ball tends to float off center giving inaccurate flow readings.



Stock No.	Gas Service	Flowmeter	Flow Range	Inlet Connection	Outlet Connection
H1760-580	Argon, W.P.	H1101B	0-60 SCFH	CGA580	5/8"-18 R.H. Internal
H1761-540	Argon	H1101B	0-60 SCFH	CGA540	
H1762-580	Helium, W.P.	H1312B	0-60 SCFH	CGA580	
H1768-540	Oxygen	H1226B	0-5 SCFH	CGA540	

CO₂ TWO STAGE FLOWMETER REGULATOR

REGULATORS



H1765-320



SMITH'S Two-Stage CO₂ is equipped with a heat exchanger unit which PREVENTS FREEZE-UPS which occur when drawing an excessive volume of carbon dioxide from cylinders.

In addition it has the same quality features of the H1760 Series regulators listed above.

- PROVEN SUPERIORITY of two-stage regulation for the accurate control of gases.
- SELF CENTERING Flowmeter tube.
- Accurate, extra-long, back pressure compensated flow tube.
- All flow tubes are made of stress-relieved Pyrex glass.
- Heat exchanger tube warms gas and prevents internal freeze-ups.

Stock No.	Gas Service	Flowmeter and Range	Inlet Connection	Outlet
H1765-320	CO ₂	H1251B 0-60 SCFH	CGA320	5/8"-18 R.H. Internal

SINGLE STAGE FLOWMETER REGULATORS

NWSA
230

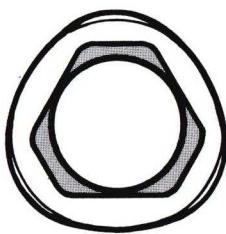


Compact, moderately priced SINGLE-stage flowmeter regulators provide efficient and accurate regulation. Has many features found in more expensive regulators: sensitive rubber diaphragm, double filters, rugged steel bonnet, and self-cleaning elastomer seat for longer trouble-free operation.

1. FLOW TUBE is extra long, back pressure compensated and is accurate to within 2% of the full scale reading.
2. FLOWMETER TUBE has a unique ball guide which centers the ball float in the flow tube and keeps it centered. Other tubes must stand absolutely perpendicular to assure flow accuracy. Without Smith's exclusive self-centering flowtube the ball will float off center and the actual gas flow can be up to 2½ times greater than is indicated.

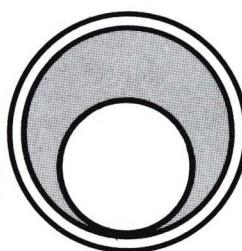
SELEC-O-GAS™ Regulator

Does the jobs of more than 4 common flowmeters. Has 4 separate scales: ARGON, CO₂, HELIUM and GENERAL. "General" scale can be used for any non-corrosive gas . . . conversion chart supplied with regulator.

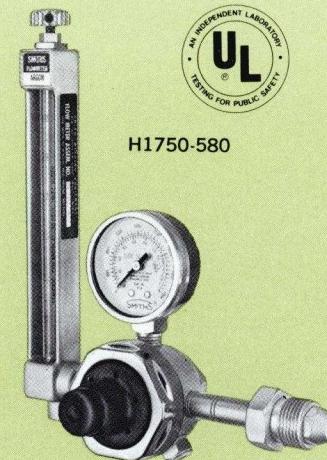


Smith's exclusive self-centering design gives the ball free up and down motion but assures correct centering.

Without Smith's self-centering feature the ball tends to float off center giving inaccurate flow readings.



Flowmeter Regulator	Gas Service	Flow Range	Flowmeter	Inlet Connection	Outlet Thread
H1750-580	Argon, W.P.	0-60 SCFH	H1101B	CGA580	
H1751-540	Argon	0-60 SCFH	H1101B	CGA540	
H1752-580	Helium, W.P.	0-60 SCFH	H1312B	CGA580	
H1755-320	CO ₂	0-100 SCFH	H1351C	CGA320	
	Argon	0-60 SCFH	H1230B	CGA580	5/8"-18 R.H. Internal
H1754-580	CO ₂	0-30 SCFH			
Selec-O-Gas	Helium	0-190 SCFH			
	General—Any Gas	0-10			



H1750-580



H1754-580
Selec-O-Gas

FIXED FLOW ADAPTORS

Designed for welding operations or other applications requiring fixed gas flows. Installs in regulator outlet or directly on 30 psig pipeline outlet without regulator. Can be used in place of flowmeter.

Set regulator at 30 psig and be assured of correct gas flow. Precision machined orifice provides accurate, continuous flow at desired setting; prevents tampering with flow and stops costly, unnecessary gas consumption.

Smith's flow adaptor is designed for use with any gas. Eight appropriate sizes are available for your flow requirements (note table). Simplifies fixing the flow.

Precision machined from brass bar stock. Inlet filter protects orifice and prevents intake of foreign particles.

FLOW S.C.F.H. (30 PSIG INLET)							
CO ₂	AIR	ARG	HEL	NIT	HYD	OXY	Sales Number
10	12.3	10.5	32.5	12.5	46	11.5	H1400-10
20	24	21	65	25	91	23	H1400-20
30	37	32	100	38	140	35	H1400-30
39	48	41	129	49	182	46	H1400-40
50.5	62	53	167	63	234	59	H1400-50
59.2	73	62	196	75	276	70	H1400-60
68	84	71	226	86	318	80	H1400-70
76	94	80	253	96	356	90	H1400-80
89	110	94	296	112	415	105	H1400-90
101.5	126	107	340	128	475	120	H1400-100



Smith's
H1400-10
Flow Adaptor

REGULATORS

HIGH PRESSURE REGULATORS—Inlet Pressures to 6,000 PSI

S44-1000 Series



Smith model S44-1000 series provides self-relieving and high pressure capabilities at an economical price. This versatile regulator can be either cylinder or panel mounted and its trim profile is excellent where space is limited. This unit features the safety and reliability of piston sensor design and has an unbalanced main valve to assure fail-safe shut-off.

The self-relieving model is designed for use on pneumatic systems; however a non-relieving model is also available for hydraulic applications or where venting is undesirable.

Proof pressure	9,000 PSI
Burst pressure	24,000 PSI
Flow Capacity:	
Gases .....	.04 SCFM/PSIG inlet pressure
Liquids	CV = .08
Operating temperature	-65° to +165°F
Leakage	Bubble Tight
Ports	1/4" NPT

Materials

Body	Brass
Bonnet	Brass
Filter	Bronze
Seats	Kel-F, Buna-N
Seals	Buna-N
Trim	300 Series S. Steel

Stock Number	Gas Service	Maximum Inlet	Outlet Range	Description
S44-1012-24	All gases compatible with materials of construction.	6000 PSI	0-2,500 PSI	Self-Relieving
S44-1012-24-003				Non-Relieving
S44-1012-24-005				Self-Relieving with wrench adjusted locking device.
S44-1012-24-007	Oxygen	6000 PSI	0-2,500 PSI	Non-Relieving with Viton-A soft goods.

HIGH PRESSURE REGULATORS—Inlet Pressures to 10,000 PSI

S44-1100 Series



The S44-1100 series high pressure regulators are designed to safely reduce inlet pressures of up to 10,000 PSIG and accurately provide lower delivery pressures. This self-relieving regulator allows the operator to reduce pressure setting in a closed system by venting the downstream pressure through the regulator. A non-relieving version is available for use on hydraulic systems.

Proof pressure	150% of max. operating
Burst pressure	400% of max. operating
Flow Capacity:	
Gases .....	.03 SCFM/PSIG inlet pressure
Liquids	CV = .06
Operating temperature	-65° to +165°F
Leakage	Bubble Tight
Ports (4)	1/4" NPT

Materials

Body	Brass or stainless steel
Bonnet	Brass or Plated brass
Filter	Bronze
Seats	Kel-F-81
Seals	Buna-N
Back-Up	Rings Buna-N & Teflon®
Trim	

Stock Number	Gas Service	Maximum Inlet		Outlet Range
		Brass	Stainless	
S44-1111-24	S44-1121-24	All Gases Com-		0-500
S44-1114-24	S44-1124-24	patible with		0-2500
S44-1116-24	S44-1126-24	materials of		0-6000
S44-1111-24-001	S44-1121-24-001			0-500
S44-1114-24-001	S44-1124-24-001			0-2500
S44-1116-24-001	S44-1126-24-001	Oxygen (VITON-A soft		0-6000
		Goods for O ₂ Service)		

LARGE FLOW—HIGH PRESSURE REGULATORS

The S44-1300 Series regulators are designed to safely reduce pressures of up to 3000 PSIG and accurately deliver high gas flows throughout the 0-600 PSIG outlet pressure range. Increased systems reliability is accomplished by combining the functions of a dome-loaded and hand loader regulators. Designed for control of high and low pressure gases, this self-relieving unit can also be furnished as a non-relieving regulator for hydraulic applications. A special baffle below the piston provides stable operation eliminating regulator hunting by preventing sudden and direct inlet pressure upon the sensor. Balanced stem design and soft seated main valve provides trouble free bubble tight service.

Proof pressure	4500 PSI
Burst pressure	12000 PSI
Flow capacity:	
Gases .....	.40 SCFM/PSIG inlet pressure
Leakage	bubble tight
Operating temperature	-65° to +165°F
Ports	1/2" inlet and outlet

Materials	
Body	Brass
Bonnet	Brass
Seats	Kel-F-81
Seals	Buna-N
Back-up	
Rings	Buna-N & Teflon
Trim	300 Series Stainless

Stock Number	Gas Service	Maximum Inlet	Outlet Range	Description
S44-1313-28-002	All gases compatible with materials of construction.	3000 PSIG	0-600	Non-relieving Regulator without gauge ports.
S44-1313-28-004				Self-relieving Regulator without gauge ports.
S44-1313-28-005				Self-relieving regulator with two 1/4" NPT gauge ports.

S44-1300 SERIES



HIGH FLOW DOME LOADED REGULATOR

The S26-1100 series is a direct acting, diaphragm sensing, externally gas loaded, dome pressure reducing regulator. Designed for accurate control of primary pressures while providing high flow rates. This model features the balanced main valve principle which permits uniform outlet pressures with variable inlet pressures, wider flow range capability, reduced seat loads which insures longer seat life and a smaller sensing area which results in a compact envelope design.

Proof pressure	150% max. operating
Burst pressure	400% max. operating
Flow capacity:	
S26-1121-381—	
Gases .....	.23 SCFM/PSIG inlet pressure
S26-1121-382—	
Gases .....	.65 SCFM/PSIG inlet pressure
Operating temperature	-65° to +165°F
Leakage	bubble tight

Materials	
Body	Stainless Steel
Dome	Stainless Steel
Diaphragm	Buna-N
Seat	Kel-F
Seals	Buna-N
Back-up rings	Buna-N
Gaskets	Kel-F
Trim	300 Series Stainless

Stock Number	Gas Service	Maximum Inlet	Maximum Outlet	Description
S26-1121-381 (.250 orifice size)	All Gases compatible with materials of construction.	10,000 PSIG	10,000 PSIG	Externally loaded 1/2" NPT Ports Stainless Steel Body and Dome
S26-1121-382 (.375 orifice size)		6,000 PSIG	6,000 PSIG	

S26-1100 SERIES





REGULATORS NWSA 230

High Purity • Corrosion Resistant Regulators

S44-2460 Series CYLINDER REGULATOR



Gauges not supplied with
Regulator—Order Separately

This compact, accurate cylinder regulator is designed to prevent contamination of high purity systems. All parts exposed to the flowing media are constructed of type 316 stainless steel or Teflon®. Metal-to-metal sealing of diaphragm between body and bonnet assures minimum inboard and outboard leakage. Soft seals are not used since they can absorb and release contaminates to system if fluid media is changed.

The stainless steel diaphragm is designed to give maximum accuracy and is specially convoluted to provide minimum "droop" characteristics.

Proof pressure 150% max. operating
 Burst pressure 400% max. operating
 Diaphragm sealing metal to metal
 Flow capacity:
 Gases01 SCFM/PSIA inlet pressure
 Operating temperature -65° to +165°F
 Leakage bubble tight

Materials

Body	.....	type 316 SS
Bonnet	.....	type 316 SS
Seat	.....	Teflon®
Diaphragm	.....	type 316 SS
Trim	.....	type 316 SS

Stock Number	Gas Service	Maximum Inlet	Outlet Range	Description
S44-2460-24		3000 PSI	0-50 PSI 0-100 PSI	Four 1/4" ports
S44-2461-24	All gases and liquids, corro- sive and non-cor- rosive, requiring high purity regulation		0-50 PSI 0-100 PSI	Same as above except certified inboard leakage rate of 2×10^{-10} cc/sec. of helium (at extra cost)
S44-2460-24-007			0-50 PSI 0-100 PSI	Five 1/4" NPT ports including purge port
S44-2461-24-007				

High Purity • Corrosion Resistant Regulators

S44-2461-24-001 LINE REGULATOR

REGULATORS



This compact, accurate line regulator is designed to prevent contamination of high purity systems. All parts exposed to the flowing media are constructed of type 316 stainless steel or Teflon®. Metal-to-metal sealing of diaphragm between body and bonnet assures minimum inboard and outboard leakage. Soft seals are not used since they can absorb and release contaminates to system if fluid media is changed.

The stainless steel diaphragm is designed to give maximum accuracy and is specially convoluted to provide minimum "droop" characteristics.

Proof pressure 150% max. operating
 Burst pressure 400% max. operating
 Diaphragm sealing metal-to-metal
 Flow Capacity:
 Gases12 SCFM/PSIA inlet pressure
 Operating temperature -65° to +165°F
 Leakage bubble tight

Materials

Body	.....	type 316 SS
Bonnet	.....	type 316 SS
Seat	.....	Teflon®
Diaphragm	.....	type 316 SS
Trim	.....	type 316 SS

Stock Number	Gas Service	Maximum Inlet	Outlet Range	Description
S44-2460-24-001		400 PSI	0-50 PSI 0-100 PSI	Four 1/4" NPT ports
S44-2461-24-001				
S44-2460-24-013	All gases and liquids, corro- sive and non-cor- rosive, re- quiring high purity regulation	400 PSI	0-50 PSI 0-100 PSI	Same except certified inboard leakage rate of 2×10^{-10} cc/sec. of helium.
S44-2461-24-013				

High Purity • Welded Diaphragm • Corrosion Resistant

This small, accurate regulator is designed to prevent contamination of systems where high purity must be maintained. All parts exposed to the flowing media are constructed of stainless steel or Teflon®. The stainless steel diaphragm is welded to the regulator body to insure absolute minimum inboard and outboard leakage. The S44-2040 series design has been tested by an independent laboratory and found to have a leakage rate of less than 2×10^{-10} atmospheric cc per second of helium or 6.2 cc per thousand years.

Proof pressure	4500 PSI
Burst pressure	12000 PSI
Flow capacity:	
Gases	.04 SCFM/PSIG inlet pressure
Operating temperature	-65° to +165°F
Leakage rate	(inboard) less than 2×10^{-10} cc/sec. helium
Diaphragm sealing	welded

Materials	
Body	304 stainless steel
Bonnet	nickel plated brass
Filter	347 stainless steel
Seats	Teflon
Seals	Teflon
Diaphragm	302 stainless steel
Trim	300 series stainless steel

Model Number	Gas Service	Maximum Inlet	Outlet Range	Description
S44-2040-22-003	All Gases and Liquids requiring high purity regulation.	3000 PSI	0-50 PSIG	1/8" NPT inlet and outlet ports; and one 1/4" outlet gauge port.
S44-2041-22-003			0-150 PSIG	
S44-2042-22-003			0-250 PSIG	
S44-2040-24-004			0-50 PSIG	1/4" NPT inlet and outlet ports; and two 1/4" gauge ports.
S44-2041-24-004			0-150 PSIG	
S44-2042-24-004			0-250 PSIG	

S44-2040 SERIES



H800 Series High Pressure Regulators

H800 Series

2,500 PSI Outlet

High pressure regulator series for use on cylinders or panel mounting with a wide variety of non-corrosive gases. Piston sensor design gives structural reliability in high pressure use. Low torque control knob and self-relieving feature permit easy adjustment of pressures in closed or dead end systems.

HIGH PRESSURE NITROGEN AND ARGON CYLINDERS. Models H803-H67U, H802-H67U (and the H810 Series models below) can be used on special 6,000 PSI high pressure nitrogen or argon cylinders. These models have the 304 stainless steel inlet connection H67U (1.020"-14 L.H. external thread).

Stock Number	Outlet Pressure Range	Inlet Connection	Outlet Connection	Inlet Gauge	Outlet Gauge	
H800	0-2,500 PSI	1/4" NPT INT.	1/4" NPT INT.	None	None	
H801				10,000	4,000	
H802-xxx		Any CGA connection, please specify		None	None	
H803-xxx				4,000	4,000	
H802-H67U		H67U		None	None	
H803-H67U		H67U		10,000	4,000	

H810 Series

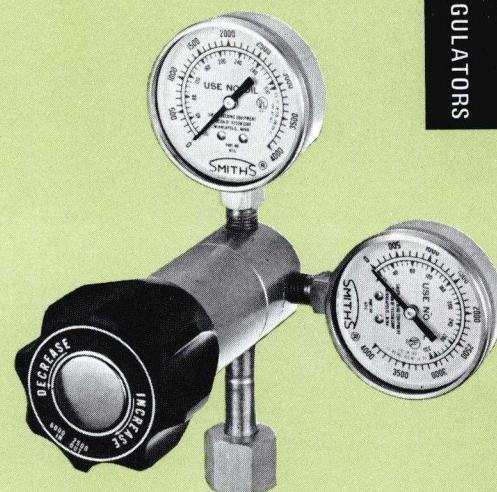
6,000 PSI Outlet

Higher pressure regulators for control of non-corrosive gases. Provides delivery pressure up to 6,000 PSI.

Stock Number	Outlet Pressure Range	Inlet Connection	Outlet Connection	Inlet Gauge	Outlet Gauge
H812-H67U	0-6,000 PSI	H67U	1/4" NPT Internal	None	None
H813-H67U	0-6,000 PSI	H67U		10,000	10,000

TO ORDER regulators with standard Compressed Gas Association (CGA) inlet connections, specify the CGA connection number in place of the "XXX".

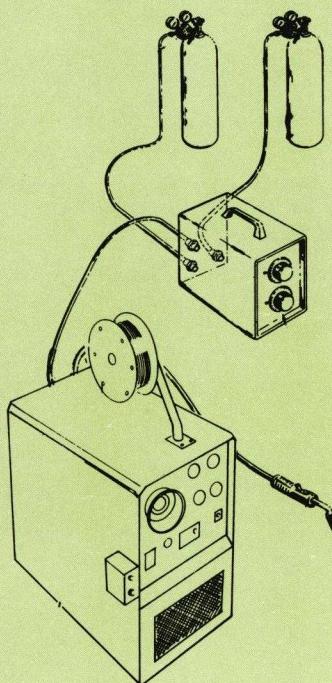
H800 SERIES



H803-540



Proportional GAS MIXERS



REGULATORS

The Smith proportional gas mixer is a pressure-flow device capable of blending two gases in infinitely variable proportions from 0 to 100%. There are 5 mixers and complete systems for MIG, TIG and Plasma welding and cutting applications with oxygen, helium, hydrogen and carbon dioxide gases. For any selected proportion, the resultant gas mixture is maintained within two percent of the full scale mixture setting. Mixture accuracy is unaffected by variations in inlet pressure, outlet pressure or flow rate.

SIMPLE TO OPERATE. 1 Set regulators at 50-100 PSI. 2 Set gas mixture percentage on bottom dial. 3 Set total gas flow on the upper dial. That is all that is necessary — quick, easy — and no mental arithmetic.

- **Eliminates Need for Premixed Gases.**

Various welding jobs require different mixes for the best performance. Premix gases may have too high or too low a percentage of Argon, resulting in either high costs or improper welding. With the Smith Gas Mixer, you enjoy the cost advantages of individual gases mixed proportionately for your specific welding job requirement.

- **Reduces Set-Up Time**

No need to change cylinders, regulators, flowmeters, hoses, etc. when changing from 100% Argon or to an Argon-CO₂ mixture or even 100% CO₂. Just turn the dial for whatever mixture you need. No critical adjustment of flowmeters or mental calculations of flows to guess at mixture rates.

- **Always Accurate: No Gas Separation!**

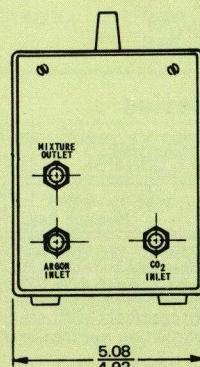
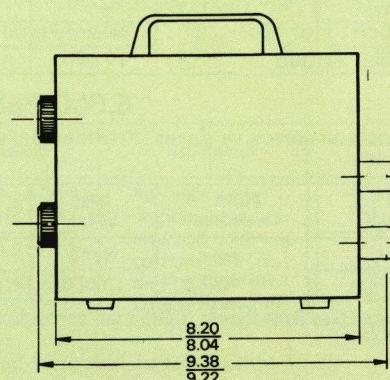
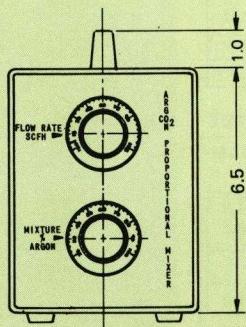
Premixed gases may separate or stratify into the individual gases within the cylinder, depending on time and temperature. The Smith Gas Mixer always gives you an accurate mixture.

- **Easy Operating, Easy Training, Easy Supervision.**

Whether you are using a single welder or using a manifold system supplying up to 10 welders, the Smith Gas Mixer is simple to operate. It's ideal for training welders and welding related personnel regarding shielding gas mixtures because they can see the effect of various gas mixtures on weld appearance, quality and penetration. Or supervisors can readily note at a glance if operator is using specified mixture.

SPECIFICATIONS

Uses	MIG, TIG or Plasma
Supply gases	Argon, CO ₂ , Oxygen, Helium, Hydrogen
Inlet pressure	Maximum 100 PSIG Minimum 5 PSIG above outlet pressure
Outlet pressure	Factory set at 45 PSIG at no flow ±2% of full scale
Mixture accuracy	5%
Mixture control sub-divisions	1 to 180 SCFH
Flow Rate	±10%
Flow rate accuracy	10 SCFH
Flow rate control sub-divisions	5/8"-18 R.H.
Inlet and outlet connections	60 micron nominal
Inlet filters	8 lbs.
Weight	



Proportional GAS MIXERS



MIXERS and COMPLETE MIXING SYSTEM

For MIG, TIG and PLASMA

Now there are five different Smith's Gas Mixers and five complete systems to meet a wide range of MIG, TIG and Plasma applications in large industrial plants or small job shops. Smith's Gas Proportioners eliminate the need for premixed gases, thereby substantially reducing gas cost. Improved weld appearance, quality and penetration are made possible with the correct gas mixture for the specific job, metal alloy and quality requirements for your specific application.

FEATURES

- Infinitely variable mixtures: 0-100% (two models 50-100%)
- $\pm 2\%$ full scale mixture accuracy
- Mixture unaffected by inlet pressure, outlet pressure or flow changes
- Inlet pressure capability of 100 PSI
- Rugged construction
- Simple operation — two controls
- Compact overall size

ADVANTAGES

- Improve weld quality
- Eliminates need for premixed gases
- Reduces cost of shielding gases
- Reduces set-up time
- Eliminates need for flowmeter
- Optimizes mixtures for each application
- Saves on clean up and rejects

MIXERS ONLY. Five different proportioner models available. Simple operation. Attach the two source gas hoses to inlet connections on back of mixer; and then attach hose between mixer outlet and inlet of the MIG, TIG or Plasma welder. See chart below.

COMPLETE GAS MIXER SYSTEMS. Consists of Smith's Gas Proportioners, two single stage preset regulators, and two 6-foot lengths of hose with inert connections. See chart below.

Complete Systems	Gas Mixer Only	Gases	% Range	Typical Applications
239-005	299-006-1	Argon & CO ₂	0-100% 100-0%	MIG (short arc) welding of mild steel and high strength steel.
239-006	299-006-2	Argon & Oxygen	0-100% 100-0%	MIG (spray arc) welding of mild steel and stainless steel.
239-013	299-006-3	Argon & Helium	0-100% 100-0%	MIG welding of aluminum, copper, nickel and copper-nickel alloys.
239-012	299-011-1	Argon & Hydrogen	50-100% 50-0%	Plasma cutting and welding. TIG welding of stainless steel. Plasma welding of titanium.
239-014	299-012-1	Argon & Helium	50-100% 50-0%	Same as 299-006-3 except primarily intended for applications in the 70 to 100% argon range. Dial in upper settings expanded for easier setting.

ACCESSORIES

269-338 REGULATOR-MANIFOLD ASSEMBLY. Attaches to outlet of gas mixer to allow the operation of up to 4 welders.

#7290 COUPLING, female gas to female inert gas.

#7293 ADAPTER, female inert gas to female $\frac{1}{16}$ "-18 R.H.

#7294 HOSE, 6' with inert gas connections.

H1107 ADAPTER, male inert gas to male $\frac{1}{16}$ "-18 R.H.

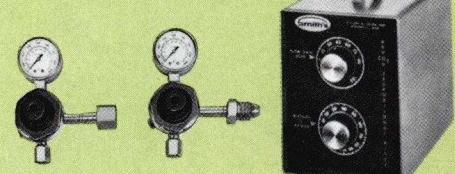
H1101A FLOWMETER, 0-60 SCFH Argon.

PRESET CYLINDER REGULATORS

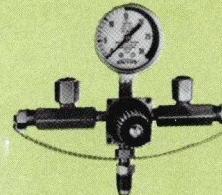
- | | |
|---------|---|
| 249-198 | CO ₂ regulator with CGA320 inlet connection and helium |
| 249-199 | Argon and helium regulator with CGA580 inlet connection |
| 249-204 | Oxygen regulator with CGA540 inlet connection |
| 249-210 | Hydrogen regulator with CGA350 inlet connection |



Complete Gas Mixer System



REGULATORS



#269-338 Regulator-Manifold Assembly



#7290

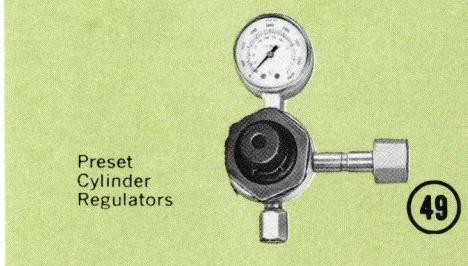


H1107



#7293

Preset Cylinder Regulators

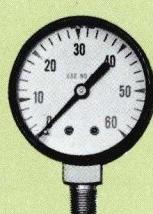




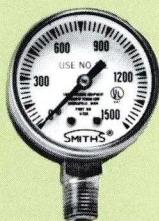
4842



7285



4841



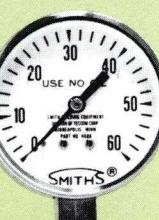
H70K



H78N



4839



H67K



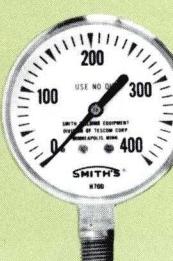
4840



H68A



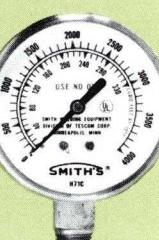
H69B



H69B



H71C



H70D



H79



6023-10000

Smith/Tescom pressure gauges are designed for welding, cutting and laboratory applications involving the measurement of compressed gases compatible with the materials of construction. Gauges should not be used at pressures greater than two-thirds of maximum calibration. Gauges are Underwriters' Laboratories Listed in accordance with their requirements for compressed gas service.

- **ACCURACY:** A.S.A. Grade B. Middle half of scale 2% of scale range, remainder 3%.
- **BOURDON TUBE:** Phosphor bronze to 600 PSI; beryllium copper 1000 to 4000 PSI
- **CONNECTIONS:** $\frac{1}{4}$ " and $\frac{1}{8}$ " NPT
- **MOVEMENT:** Quality brass construction with gears precision generated and bearing surfaces finely finished to insure smooth motion and extended service life.

2" Diameter Gauges — $\frac{1}{8}$ " NPT Socket

Dual Range: PSI and KG/CM²

Stock No.	Pressure Range Zero to:	Graduations	Case Finish
4842	30 PSI 2 KG/CM ²	1 PSI 0.1 KG/CM ²	Enamel (red)
7285	60 PSI 4 KG/CM ²	2 PSI 0.2 KG/CM ²	Enamel (red)
4840	150 PSI 10 KG/CM ²	5 PSI 0.2 KG/CM ²	Enamel (green)
4841	400 PSI 28 KG/CM ²	10 PSI 0.5 KG/CM ²	Enamel (red)
4839	4000 PSI 275 KG/CM ²	100 PSI 12.5 KG/CM ²	Enamel (green)

2" Diameter Gauges — $\frac{1}{4}$ " NPT Socket

Stock No.	Pressure Range Zero to:	Graduations	Case Finish
H67N	30 PSI	1 PSI	Enamel (gold)
H68N	150 PSI	5 PSI	Enamel (gold)
H69C	60 PSI	2 PSI	Enamel (gold)
H70N	400 PSI	10 PSI	Enamel (gold)
H70K	1,500 PSI	25 PSI	Enamel (gold)
H71N	4,000 PSI	100 PSI	Enamel (gold)
H730-8	4000 PSI-75 KG/CM ²	100 PSI 12.5 KG	Chrome plated

2 $\frac{1}{2}$ " Diameter Gauges — $\frac{1}{4}$ " NPT Socket

Stock No.	Pressure Range Zero to:	Graduations	Case Finish
H67K	30 PSI	1 PSI	Brass, polished
H68A	60 PSI	2 PSI	Brass, polished
H68P	60 PSI	2 PSI	Brass, polished
H69B	200 PSI	5 PSI	Brass, polished
H70D	400 PSI	10 PSI	Brass, polished
H71C	4,000 PSI	100 PSI	Brass, polished
H79	10,000 PSI	200 PSI	Brass, polished

3 $\frac{1}{2}$ " Diameter Gauges

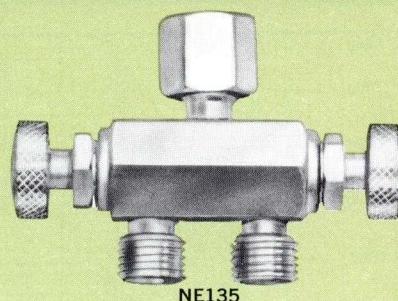
Stock No.	Pressure Range Zero to:	Graduations	Case Finish
6023-10000	10,000 PSI	200 PSI	Enamel black

TWO-HOSE MANIFOLDS

Two hose manifolds makes possible the use of two torches from one regulator. Individual needle valves control each hose for safer operation.

NE135 Oxygen two-hose manifold, $\frac{1}{16}$ "-18 R.H. connections

NE136 Fuel gas two-hose manifold, $\frac{1}{16}$ "-18 L.H. connections



NE135

REGULATOR INLET CONNECTIONS

Conn. No.	Standard Connection For: (Gas)	Nut No.	Tailpiece (Gland) No.	NUTS	TAILPIECES
CGA200	Acetylene, MC Tank	CGA200-1	CGA200-2		
CGA300	Alternate standard for Acet. and LP	CGA300-1	CGA300-2		
CGA320	CO ₂	CGA300-1	CGA320-2 With Washer		
CGA350	Hydrogen	CGA350-1	CGA350-2		
CGA410	Canadian Standard for Acetylene	CGA410-1	CGA410-2		
CGA510	Acetylene and LP	CGA510-1	CGA510-2		
CGA540	Oxygen (Industrial)	CGA540-1	CGA540-2		
CGA540M	Oxygen (Medical) Nickel Plated	CGA540-1M	CGA540-2M		
CGA580	Water Pumped Air, Argon, Helium, Nitrogen	CGA580-1	CGA510-2		
CGA590	Oil Pumped Air, Argon, Helium, Nitrogen	CGA590-1	CGA510-2		

REGULATORS

REGULATOR INLET ADAPTERS



Part Number	H5	H59	H59A	H60	H61	H64	H88°	H86†	H87‡	CGA580-540
Regulator Connection Thread	.922"-18 R.H. Auto-Lite	.845"-14 R.H. Commercial	.845"-14 R.H. Commercial	.834"-14 R.H. Commercial	.898"-14 L.H. POL	.895"-18 R.H. Auto-Lite	CGA 510	CGA 300	CGA 300	CGA 580
to Cylinder Connection Thread	.625"-20 R.H. "MC"	.875"-14 L.H. POL	.875"-14 L.H. POL	.922"-18 R.H. Auto-Lite	.922"-18 R.H. Auto-Lite	.845"-14 R.H. Commercial	CGA 300	CGA 510	CGA 510	CGA 540

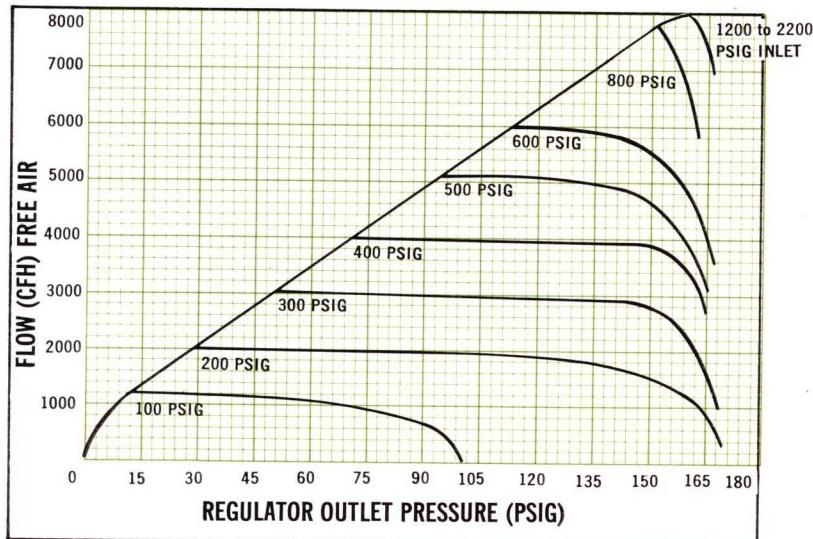
*One Piece Adapter

†Three Piece Straight Adapter

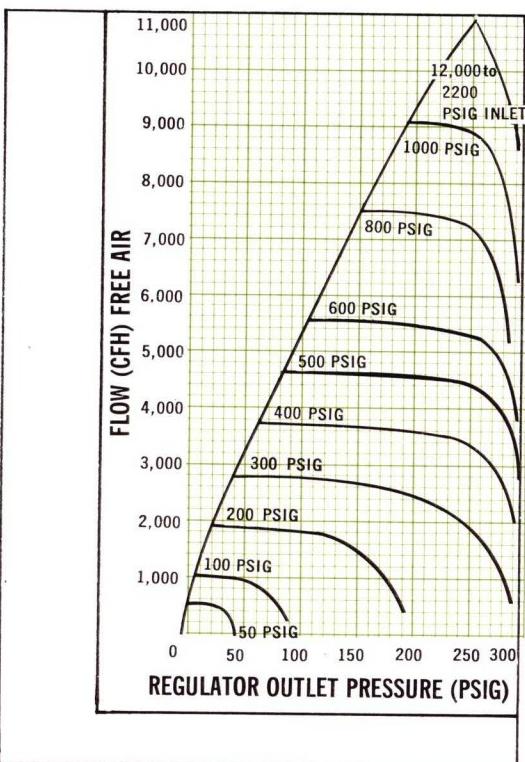
‡Three Piece 90° Adapter



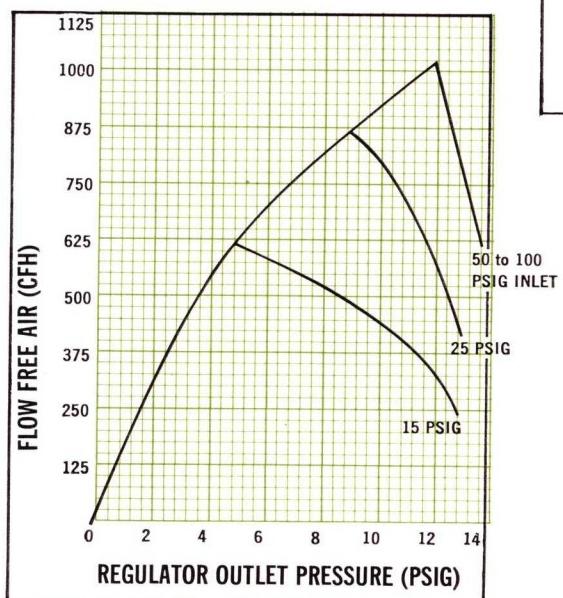
FLOW CHARTS



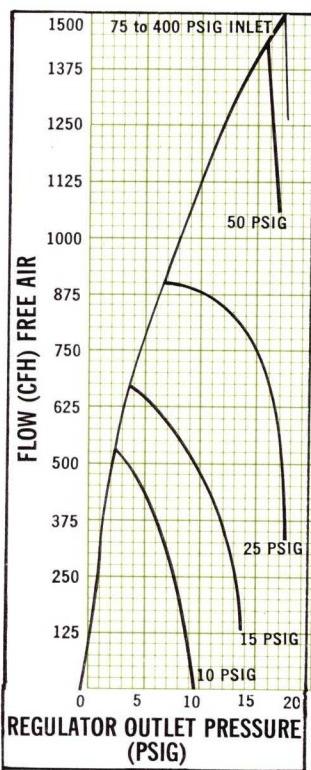
H1510 OXYGEN, H1532 HYD. & H1533 CO₂ CYLINDER REGULATORS



**H1511 OXYGEN, H1530 INERT GAS
CYLINDER REGULATORS &
H1513 OXYGEN MANIFOLD REG.**



H1576, H1577, H1578 & H1579 FUEL LINE REGULATORS

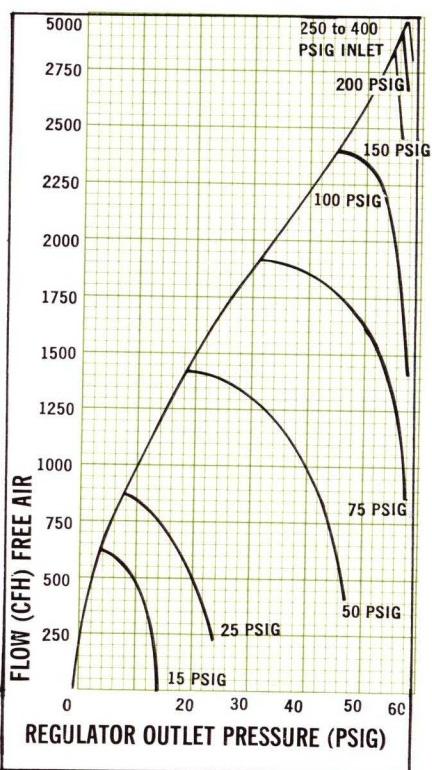


**H1520 & H1521
FUEL CYLINDER
REGULATORS &
H1523 ACET.
MANIFOLD
REGULATOR**

IMPORTANT

IMPORTANT
Flow curves are based on results obtained using FREE AIR. See instructions on page 55 to determine actual flow for gas used.

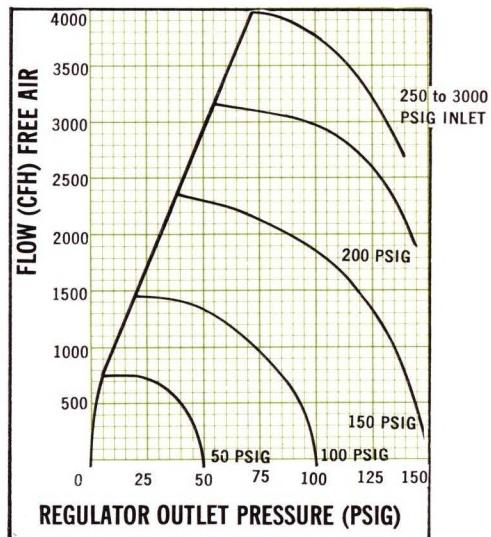
H1522 FUEL CYLINDER REGULATOR



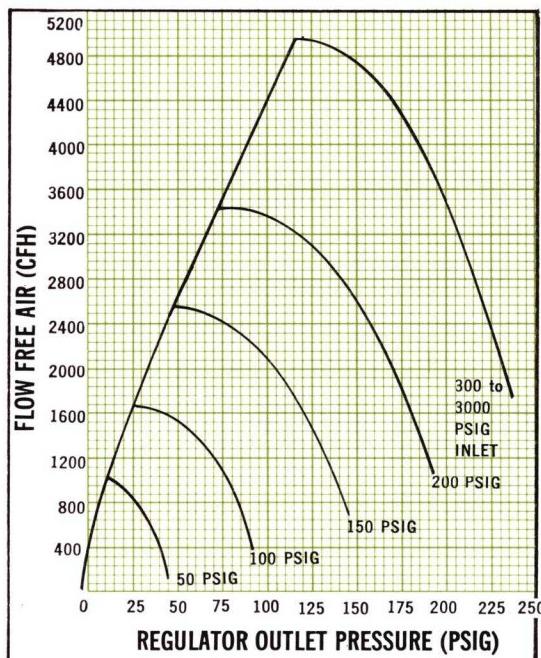
FLOW CHARTS



H1610 OXYGEN CYLINDER REGULATOR



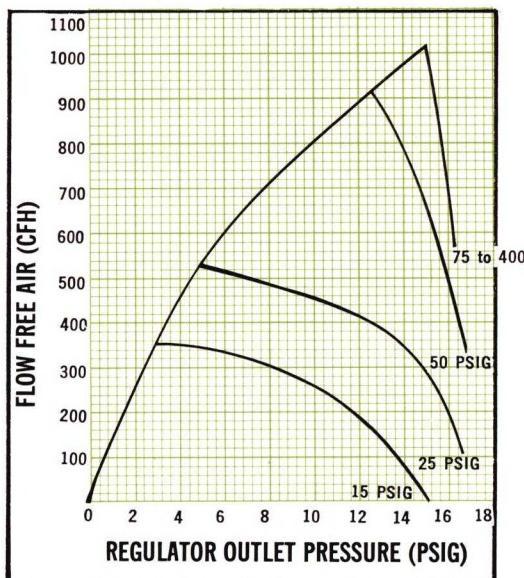
H1611 OXYGEN CYLINDER REGULATOR



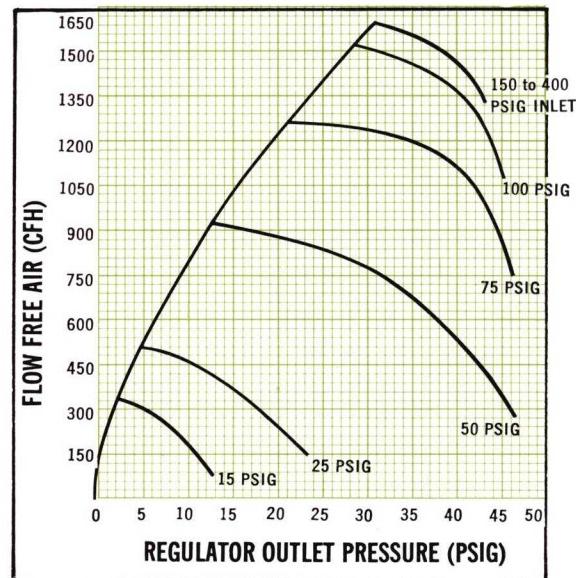
H1600 SERIES

H1620 ACETYLENE CYLINDER REGULATOR

H1621 FUEL CYLINDER REGULATOR



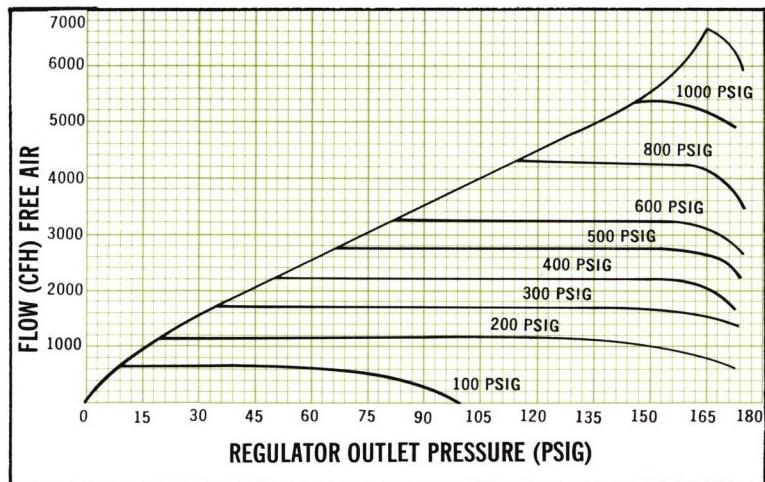
H1622 L.P. CYLINDER REGULATOR



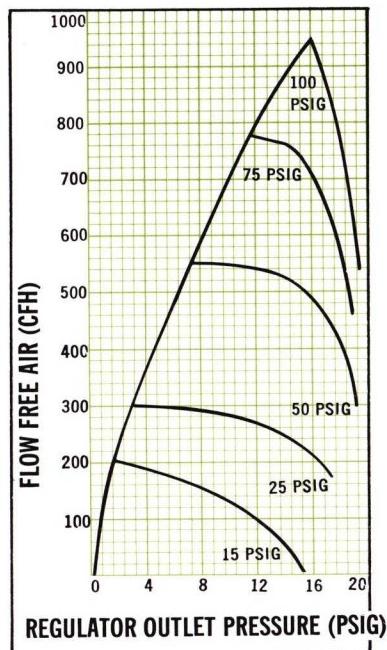
REGULATORS

IMPORTANT

Flow curves are based on results obtained using FREE AIR. See instructions on page 55 to determine actual flow for gas used.

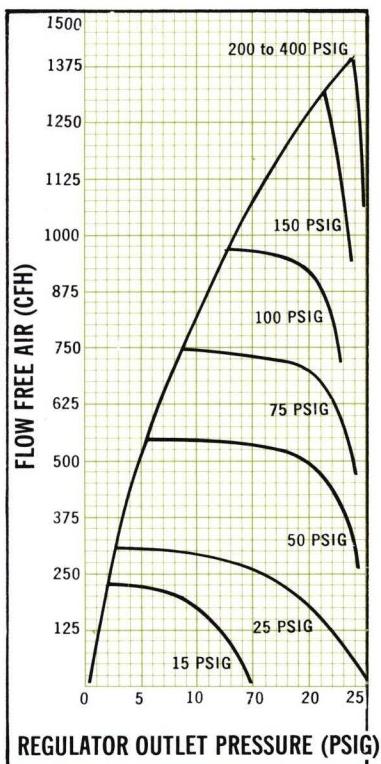


H1710 OXYGEN
CYLINDER REGULATOR

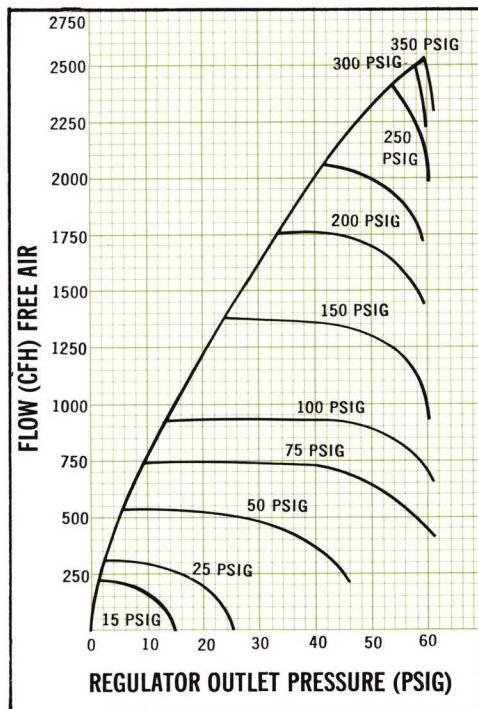


H1777, H1778 & H1779
FUEL LINE REGULATORS

H1700 SERIES



H1720 & H1721 FUEL
CYLINDER REGULATOR



H1722 FUEL
CYLINDER REGULATOR

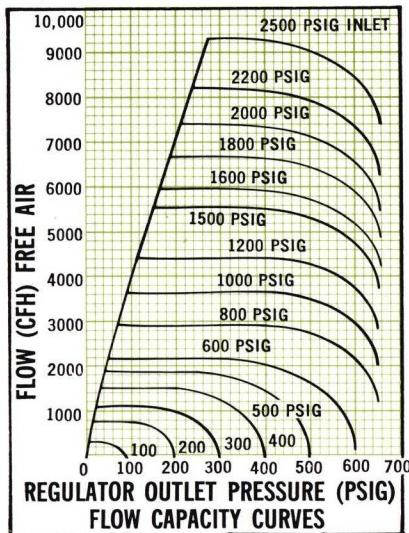
IMPORTANT

Flow curves are based on results obtained using FREE AIR. See instructions on page 55 to determine actual flow for gas used.

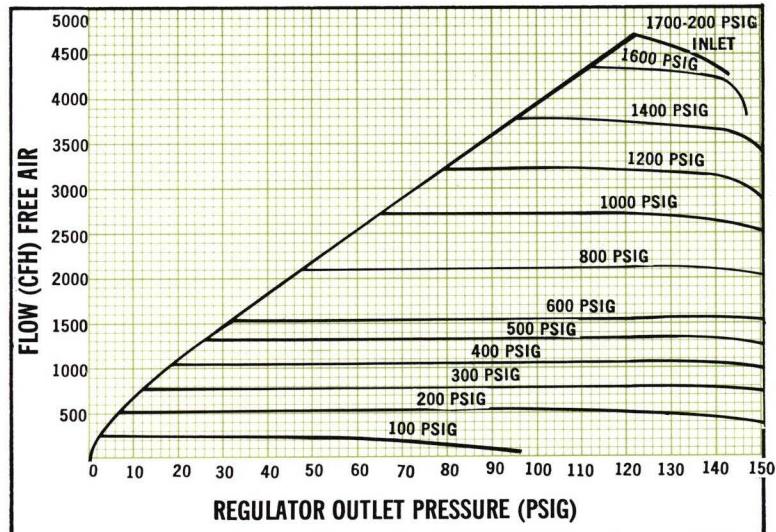
FLOW CHARTS



H1900 SERIES



H1880-540 OXYGEN CYLINDER REGULATOR
H1882-580 INERT GAS CYLINDER REGULATOR

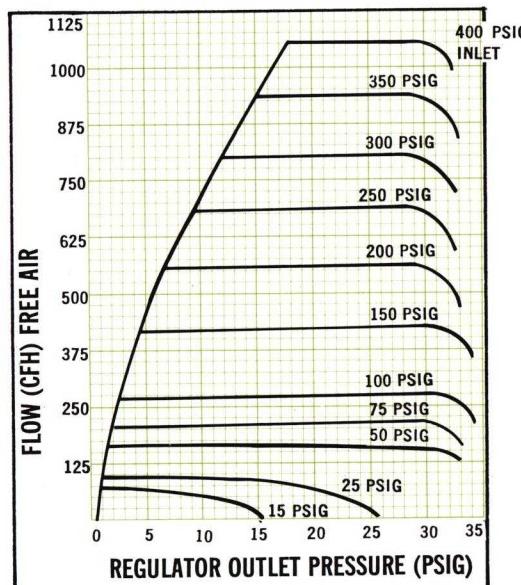


H1910
OXYGEN REGULATOR

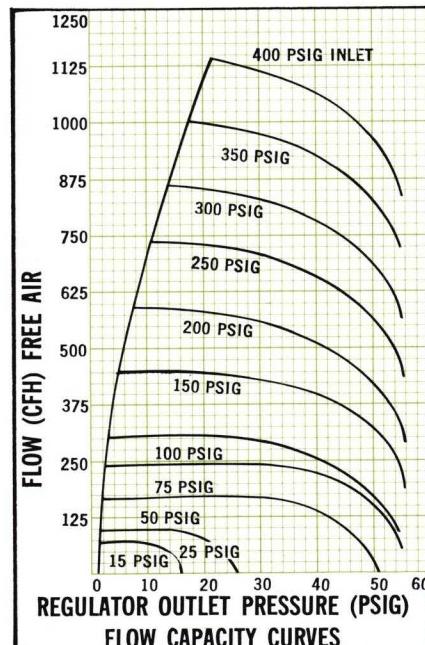
IMPORTANT

Flow curves are based on results using FREE AIR. To determine flow for specific gas multiply flow from chart by correction factor listed below.

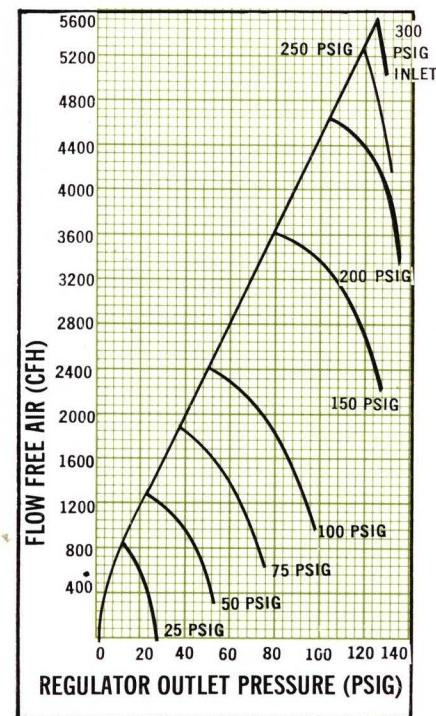
Acetylene	1.054	Butane .....	.706	Carbon Dioxide .....	.810
Oxygen .....	.951	Hydrogen	3.790	Argon .....	.852
Propane .....	.810	Nitrogen	1.015	Helium	2.690



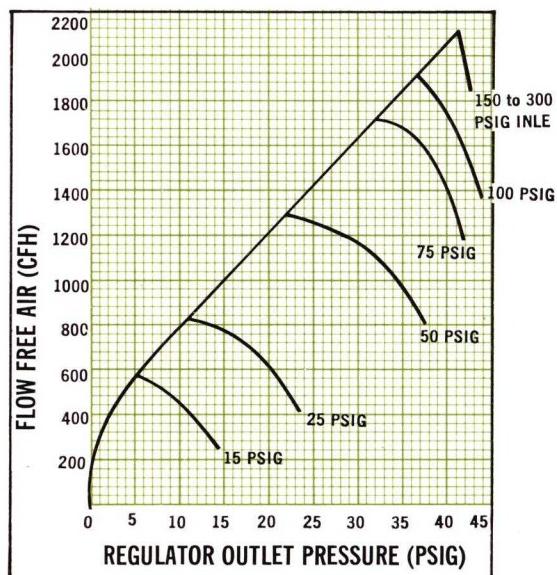
H1920 & H1921
FUEL REGULATORS



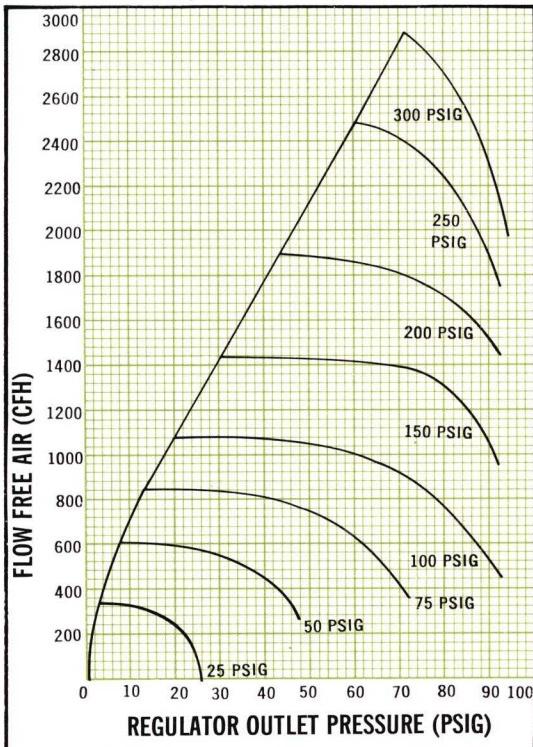
H1922
LP-GAS REGULATOR



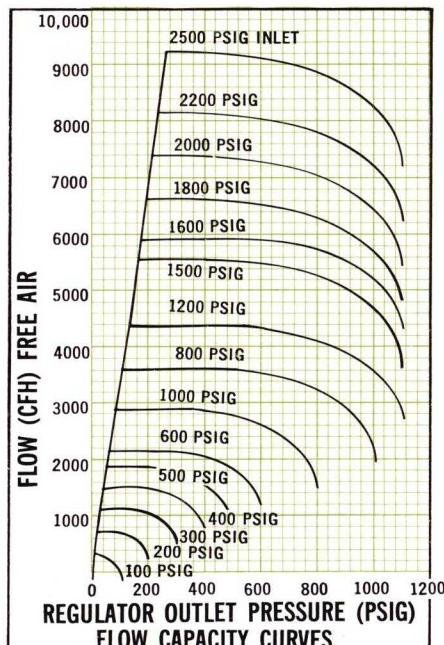
H1573, H1574 & H1575
OXYGEN LINE REGULATORS
H1508 AIR LINE REGULATOR



H1570, H1571 & H1572 OXY. LINE REGULATORS
H1580 FUEL LINE REGULATOR



H1708, H1774 & H1775
LINE REGULATORS



H1881-540 OXYGEN CYLINDER REGULATOR
H1883-580 INERT GAS CYLINDER REGULATOR

IMPORTANT

Flow curves are based on results obtained using FREE AIR. See instructions on page 55 to determine actual flow for gas used.

ACETYLENE-AIR OUTFITS

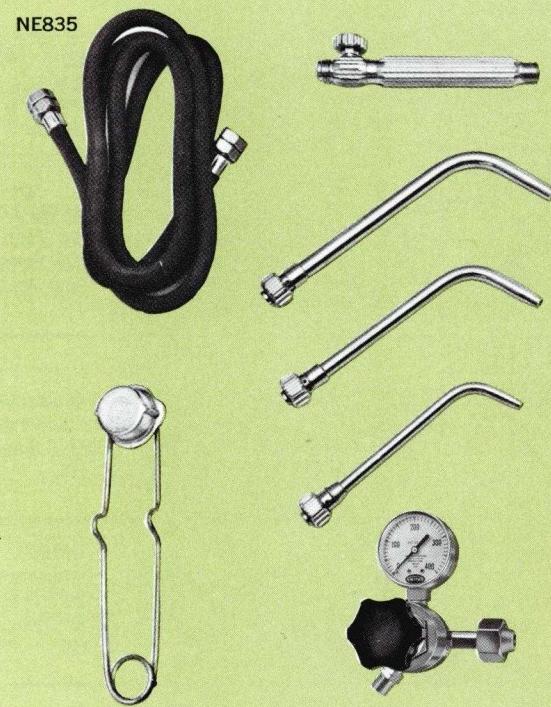
Handi-Heet soldering outfits provide fast heat with acetylene and atmospheric air. Concentrated flame delivers 4800°F. heat just where it is needed for maximum performance on all types of soldering, heating, straightening, tiling, thawing and other applications. No oxygen tank needed. Highly portable.

Tough NE180 torch body is built to last — machined from solid brass. Unlike plastic torches it is not sensitive to temperature changes. Full length fluted handle provides firm comfortable grip. Needle valve provides positive flame control. Easy to operate . . . hold torch and set flame with one hand.

Handi-Heet soldering tips have Smith's famous Slip-In design. Seat perfectly by hand . . . no wrench needed. "O" ring provides gas tight seal . . . allows operator to rotate tip to any position without extinguishing flame. All tips nickel-plated.

Sturdy single stage regulator provides steady and sensitive gas regulation for maximum torch performance.

Outfit No.	Torch Body	Tips	Regulator Fits Tanks	Accessories
NE835	NE180	NE180-1 NE180-2 NE180-3	"B" and Autolite (CGA520)	RL111 6' Hose N113A Lighter
NE835A				RL121 12½' Hose N113A Lighter
NE825B	NE180	NE180-2	"B" and Autolite	RL398 10' Hose N113A Lighter
NE828B	NE180	NE180-2	"MC" (CGA200)	RL398 10' Hose



L-P GAS-AIR OUTFITS

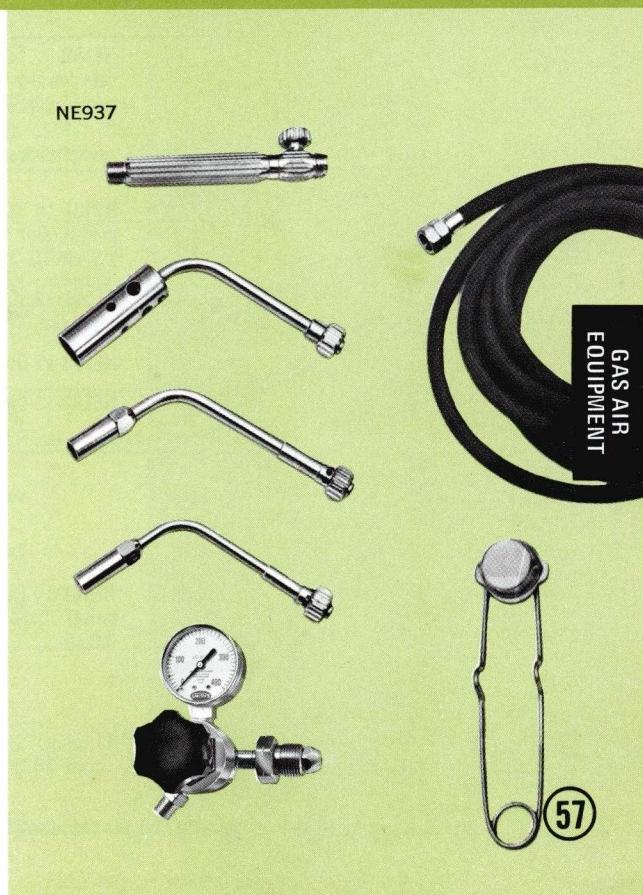
Use low-cost, convenient LP-Gases (propane, butane, etc.) and atmospheric air for fast, clean heat. No oxygen tank needed. Highly portable, delivers 3800°F. heat in home workshops or on rugged construction sites. Ideal for all types of sweating, soldering, heating and many other applications.

Tough NE180 torch body is built to last — machined from solid brass. Unlike plastic torches it is not sensitive to temperature changes. Full length fluted handle provides firm comfortable grip. Needle valve provides positive flame control. Easy to operate . . . hold torch and set flame with one hand.

Handi-Heet soldering tips have Smith's famous Slip-In design. Seat perfectly by hand . . . no wrench needed. "O" ring provides gas tight seal . . . allows operator to rotate tip to any position without extinguishing flame. All tips nickel-plated.

Sturdy single stage regulator provides steady and sensitive gas regulation for maximum torch performance.

Outfit No.	Torch Body	Tips	Regulator Fits Tanks	Accessories
NE937	NE180	NE182-11 NE182-21 NE182-41	P.O.L. (CGA510) H1982-510	RL121 12½" Hose N113A Lighter
NE927A		NE182-41		RL398 10' Hose N113A Lighter
NE927C	NE180	NE182-01 NE182-11		RL121 12½" Hose





HANDI-HEAT®

Acetylene-AIR
TIPS - 4800° F

NE180



Length 5 $\frac{5}{8}$ "
Weight 8 $\frac{1}{4}$ oz.

NE180 TORCH BODY. Built to last a lifetime. Machined from solid brass. IAA hose connection "A" $\frac{1}{8}$ "-18 L. H. Thread, fits R12 or R14D hose connections.

NE180-4 Tip, Giant Size tip for fast paint burning, heavy soldering and heating. $\frac{3}{8}$ " flame opening. Flame cone 1 $\frac{1}{4}$ " long. Acetylene consumption 22.8 cfh.

NE180-4

Length 8"
Weight 3 $\frac{1}{4}$ oz.

NE180-3 Tip, Large Size for pipe thawing, light brazing and silver soldering. $\frac{1}{4}$ " flame opening. Flame cone 1 $\frac{1}{2}$ " long. Acetylene consumption 9.0 cfh.

NE180-3

Length 7 $\frac{5}{8}$ "
Weight 3 $\frac{1}{2}$ oz.

NE180-2 Tip, Medium Size for all types of soft soldering, body leading, etc. No. 13 drill size flame opening. Flame cone 1 $\frac{1}{4}$ " long. Acetylene consumption 5.2 cfh.

NE180-2

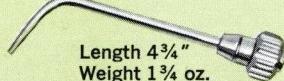
Length 6 $\frac{7}{8}$ "
Weight 2 $\frac{1}{2}$ oz.

NE180-1 Tip, Small Size for fine instrument work, auto radiators, etc. No. 26 drill size flame opening. Flame cone $\frac{3}{4}$ " long. Acetylene consumption 2.8 cfh.

NE180-1

Length 6 $\frac{1}{8}$ "
Weight 1 $\frac{1}{8}$ oz.

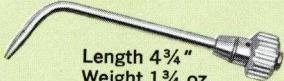
NE180-0



Length 4 $\frac{3}{4}$ "
Weight 1 $\frac{3}{4}$ oz.

NE180-0 Tip, Fine Size for jewelry soldering. Acetylene consumption 1.5 cfh.

NE180-00



Length 4 $\frac{3}{4}$ "
Weight 1 $\frac{3}{4}$ oz.

NE180-00 Tip, Super Fine size for delicate jewelry work. Acetylene consumption .5 cfh.

NE183-13



NE181-14

Length 8 $\frac{7}{8}$ "
Weight 10 $\frac{1}{2}$ oz.

NE181-14 SOLDERING IRON with Diamond Point bit. Acetylene consumption 1.5 cfh.

NE181-12 SOLDERING IRON with Chisel Point bit.

NE183-11 Diamond Point bit only.

NE183-13 Chisel Point bit only.

GAS AIR
EQUIPMENT

NE181-16



Length 8 $\frac{3}{4}$ "
Weight 6 $\frac{3}{8}$ oz.

NE181-16 Paint Burner. Has adjustable swivel head. Acetylene consumption 9.0 cfh.

- NO OXYGEN TANK NEEDED



- FAST, ECONOMICAL HEAT

- NO WRENCH NEEDED Tips are hand-tightened.

- ONE HAND FLAME ADJUSTMENT

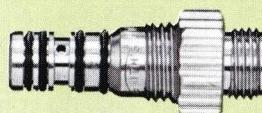
- 360° TIP TURNING RADIUS Can turn tip without extinguishing flame.

- ALL BRASS BODY

- TROUBLE-FREE NEEDLE VALVE

- RUGGED TIPS

- NICKEL PLATED FOR ADDED HEAT RESISTANCE



WELDING TORCH ADAPTOR. Use Handi-Heet tips in AIRLINE, PIPELINER or SILVER STAR torch bodies.

ADAPTOR

SW60
MW60
AW60

FITS TORCH BODY

SW1, SW2
MW5, PW1
AW1

Weight

4 $\frac{3}{4}$ oz.
2 $\frac{1}{4}$ oz.
1 $\frac{3}{4}$ oz.



NE184-5

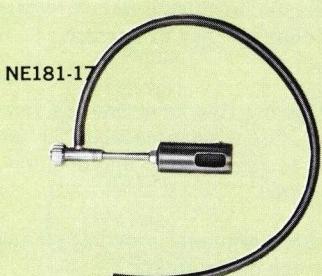


NE184-6

POL ADAPTORS

NE184-5 Adaptor allows use of POL style tips on Smith's NE180 Torch Body.

NE184-6 Adaptor allows use of Smith's Acetylene or LP-Gas tips on POL Torch Body.

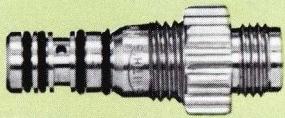


Weight 8 oz.

NE181-17 HALIDE LEAK DETECTOR For detecting leaks in refrigerators, air conditioners and other units using halide gas. Simple to operate. Flame color changes to indicate leak. Can detect concentrations of gas as low as 15 parts per million parts of air (or a leak of 5 oz. per year!) NE181-17P Replacement Reactor Plate.

Burns LP-Gas (propane, butane, etc.) with atmospheric air (3800° F Temperature). Ideal for sweating copper joints up to 6" diameter; soldering - leading - thawing - heating - straightening.

- NO OXYGEN TANK NEEDED
- CLEAN, ECONOMICAL HEAT
- NO WRENCH NEEDED. Tips are hand tightened.
- ONE-HAND FLAME ADJUSTMENT
- 360° TIP TURNING RADIUS. Can turn tip without extinguishing flame.
- ALL BRASS BODY
- TROUBLE-FREE NEEDLE VALVE
- RUGGED TIPS
- NICKEL PLATED FOR ADDED HEAT RESISTANCE



WELDING TORCH ADAPTOR

Use Handi-Heet tips in AIRLINE, PIPELINER, or SILVER STAR torch bodies.

ADAPTORS		
ADAPTOR	Fits Torch Body	Weight
SW60	SW1, SW2	4 3/4 oz.
MW60	MW5, PW1	2 1/4 oz.
AW60	AW1	1 3/4 oz.



NE184-5

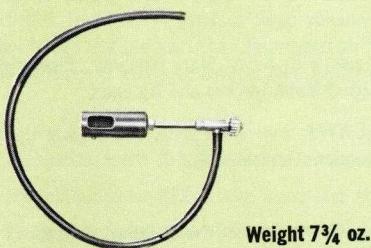


NE184-6

POL ADAPTORS

NE184-5 Adaptor allows use of POL style tips on Smith's NE180 Torch Body.

NE184-6 Adaptor allows use of Smith's Acetylene or LP-Gas tips on POL Torch Body.



Weight 7 3/4 oz.

NE183-17 HALIDE LEAK DETECTOR

For detecting leaks in refrigerators, air conditioners and other units using halide gas. Simple to operate. Flame color changes to indicate leak. Can detect concentrations of gas as low as 15 parts per million parts of air (or a leak of 5 oz. per year!).

NE181-17P Replacement Reactor Plate.

Values given for flame cone lengths and gas consumption are approximate.



NE180 TORCH BODY

Use with LP-Gas or acetylene. Machined from solid brass. IAA hose connection "A" $\frac{5}{16}$ "-18 L.H. thread, fits R12 or R14D hose connections.



Length 5 $\frac{3}{8}$ "
Weight 8 $\frac{1}{4}$ oz.

NE182-61 GIANT SIZE TIP

Recommended for sweat fittings up to 6" diameter. Flame opening 1.375"; flame cone 2 $\frac{7}{8}$ " long; LP-gas consumption 25.3 c.f.h. 64,000 B.t.u.



Length 8 $\frac{1}{2}$ "
Weight 11 $\frac{1}{2}$ oz.

NE182-51 EXTRA LARGE SIZE TIP

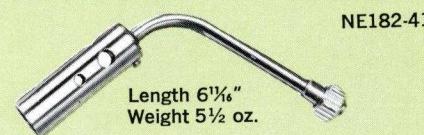
Recommended for sweat fittings up to 4" diameter. Flame opening 1.125"; flame cone 2 $\frac{1}{2}$ " long; LP-gas consumption 16.5 c.f.h. 41,745 B.t.u.



Length 8 $\frac{3}{8}$ "
Weight 9 oz.

NE182-41 LARGE SIZE TIP

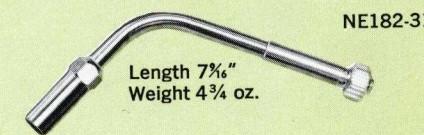
Recommended for sweat fittings up to 2" diameter. Flame opening .875"; flame cone 2" long; LP-gas consumption 8.8 c.f.h. 22,265 B.t.u.



Length 6 $\frac{1}{16}$ "
Weight 5 $\frac{1}{2}$ oz.

NE182-31 MEDIUM SIZE TIP

Recommended for sweat fittings up to 1 $\frac{1}{2}$ " diameter. Flame opening .563"; flame cone 1 $\frac{3}{4}$ " long; LP-gas consumption 7.1 c.f.h. 17,965 B.t.u.



Length 7 $\frac{3}{16}$ "
Weight 4 $\frac{3}{4}$ oz.

NE182-21 SMALL SIZE TIP

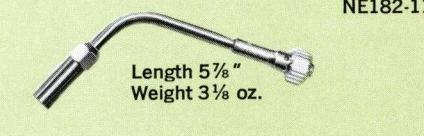
Recommended for sweat fittings up to 1" diameter. Flame opening .5"; flame cone 1 $\frac{1}{16}$ " long; LP-Gas consumption 4.1 c.f.h. 10,375 B.t.u.



Length 6 $\frac{5}{8}$ "
Weight 3 $\frac{3}{4}$ oz.

NE182-11 FINE SIZE TIP

Recommended for sweat fittings up to $\frac{1}{2}$ " diameter. Flame openings .437"; flame cone 1 $\frac{1}{16}$ " long; LP-gas consumption 2.2 c.f.h. 5,565 B.t.u.



Length 5 $\frac{7}{8}$ "
Weight 3 $\frac{1}{8}$ oz.

NE182-01 EXTRA FINE SIZE TIP

Needle point flame for fine-soldering and jewelry work. Flame opening .373"; flame cone 1 $\frac{1}{16}$ "; LP-gas consumption .84 c.f.h. 2,125 B.t.u.



Length 5 $\frac{1}{4}$ "
Weight 2 $\frac{1}{2}$ oz.

NE183-14 SOLDERING IRON

With diamond point bit. LP-gas consumption, 1.1 c.f.h. 2,785 B.t.u.



NE183-14

Length 8 $\frac{7}{8}$ "
Weight 11 $\frac{1}{4}$ oz.

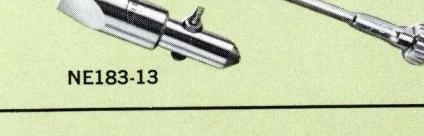
NE183-12 SOLDERING IRON

With chisel point bit.



NE183-11 SOLDERING IRON

Diamond point bit only.



NE183-13 SOLDERING IRON

Chisel point bit only.



NE183-13

Length 8 $\frac{7}{8}$ "
Weight 11 $\frac{1}{4}$ oz.

NE183-16 PAINT BURNER

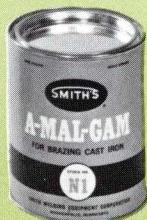
Flame opening 1 $\frac{1}{32}$ " by 1 $\frac{3}{8}$ " wide; LP-gas consumption 8.8 c.f.h. 22,265 B.t.u.



NE183-16

Length 6 $\frac{1}{16}$ "
Weight 5 $\frac{1}{2}$ oz.

GAS AIR
EQUIPMENT



N1 Braze Flux



N3 All Purpose Flux



N131



N113A

N116



N230

Drill Cleaners



60

Smith's Quality Fluxes

Stock No.	Description	Weight
N1	BRONZE WELDING AND BRAZING FLUX. Tins easily at low heat and forms perfect bond.	1 lb.
N3	ALL-PURPOSE FLUX. For welding steel, malleable iron copper and brass with bronze rod. Makes an excellent bond even if too much heat is used.	1 lb.
N41	CAST IRON FLUX. Dissolves the slags and oxides present in castings and floats them to the surface of the puddle.	1 lb.

Safety Goggles for Welding and Cutting

N131	Soft-side jumbo plate goggle provides increased visibility and comfort. The flexible vinyl plastic conforms comfortably to the face . . . no sharp corners or metal to dig or cut. Keeps wearer cool with 6 indirect vents for improved air circulation and fogging. Light in weight, the N131 fits over all personal glasses and gives as much as 50% greater downward vision. The N131 meets the latest USASI Standards, Z87 Code for welding and cutting goggles. The Federal Spec. shade 5 glass lens is heat treated (hardened to meet impact resistance requirements).
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Quality Accessories

N113A	SINGLE FLINT LIGHTER. A dependable, low price lighter. Large shield collects gas from the tip and assures instant lighting.
N113-3	EXTRA FLINTS FOR N113A lighter above. Packed 6 flints to a box.
N116	THREE FLINT LIGHTER. Provides three times normal ignition. High quality, heavy duty lighter made of round edge, flat wire and zinc plated for protection against rust. Length 7 1/4".
N116-1	THREE FLINT RENEWALS for N116 lighter above. Easy to install.
N230	WRENCH. Sized for use with Silver Star, Pipeliner, Pipewelders' Special, Airline and Lite-O-Matic Torches and Tip Ends.
	TIP CLEANERS DRILL TYPE. Individual style. See cutting tip section and welding tip sections for drill sizes.
N250	STANDARD SET: 13 cleaners for drill size holes #75 to #49. Use with Silver Star, Pipeliner and Airline Tips.
N260	JUMBO SET. 9 cleaners for drill size holes #48 to #23. Use with large size cutting and welding tips.
N265	KING SIZE SET. Extra-long (4 1/4") tip cleaners will clean the entire length of practically any standard size cutting tip. Set consists of 12 cleaners for drill sizes 75 to 49.

ACCESSORIES



Cylinder Trucks

- NE620 Strong compact single-handle truck for small cylinders. 6"x1.5" semi-pneumatic wheels. Height 39 $\frac{1}{2}$ ". Weight 13 lbs.
- NE621 Heavy duty truck with tool box for large cylinders. 14"x2" semi-pneumatic wheels. Base plate 13"x24". Height 45 $\frac{3}{4}$ ". Weight 55 lbs.
- NE622 Heavy duty cylinder truck with tool box for medium and small cylinders. 10"x1.75" semi-pneumatic wheels. Base plate 9"x18". Height 39 $\frac{1}{4}$ ". Weight 30 lbs.

REPAIR KITS. Avoid many costly repair bills . . . make minor repairs to your SMITH'S equipment "on-the-job"—right in your own shop.

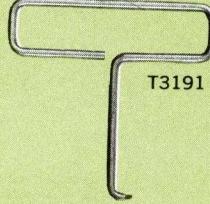
- AC101 For Airline Cutting Assemblies.
- SC100 For Silver Star Hand Cutting Torches.
- SC101 For Silver Star Cutting Assemblies.
- SC729-100 For Tuf Tony Cutting Torches.
- PC101 For Pipewelders' Special Cutting Assemblies.
- MC101 For Pipeliner Cutting Assemblies.
- H100-100 For H100, H100C, H101J, H101P and H481 BB style regulators.
- H102E-100 For H102E, H451A, and H452 BB style regulators.
- H313-100 For H313, H313C, H315, H315P, H421 and H491 BB-2 style regulators.
- H317-100 For H317A, H471A and H472 BB-2 style regulators.
- H713-100 For H713 Econoflo Oxygen Regulator.
- H715-100 For H715 and H715P and Econoflo Line Regulators.
- H1504 For H1510-540, H1511-540, H1513, H1522-510, H1532-350 cylinder regulators, all H1500 series LINE regulators and H1610-540, H1611-540, H1622-510 two-stage regulators.
- H1505 For H1520-300, H1521-510, H1523, H1530-580, H1533-320, H1620-300 and H1621-510 regulators.
- H1704 For H1710-540, H1722-510 and all H1700 series LINE regulators.
- H1705 For H1720-300 and H1721-510 regulators.
- H1904 Repair Kit for H1910-540, H1922-510, H1982-510.
- H1905 Repair Kit for H1920-300, H1921-510, H1980-200, H1981-300, H1983-520.
- T3191 'O' RING HEAD TOOL. Removes 'O' rings from the heads of all Smith's cutting assemblies and cutting torches.

Preheating Torch

PREHEATING TORCH. Designed to produce large volume heat at low cost for preheating heavy castings, cylinder heads and blocks. Uses compressed air and produces a hot flame which may be varied from a few inches in length to several feet. Burns kerosene, distillate, or LP-gases.

- NE202 Preheating torch only for heavy heating. 10 lbs.
- NE212 Preheating torch NE202 with hose, less stand. 12 $\frac{1}{2}$ lbs.
- NE222 Preheating torch NE202 with hose and stand. 19 $\frac{1}{2}$ lbs.
- NE213A 6 ft. length special oil hose with connection. $\frac{1}{2}$ lb.
- NE214A 12 $\frac{1}{2}$ ft. length $\frac{1}{4}$ " air hose with 2 connections. 1 $\frac{1}{2}$ lbs.
- NE215 Adjustable stand for all preheating torches. 7 lbs.

Torch No.	Fuel Pressure	Air PSI	Air CFH	Compressor Size
NE202	15 PSI	40-70	135-280	3 $\frac{1}{2}$ x3" 1 Horse

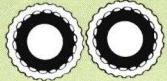


ACCESSORIES



WELDING HOSE NWSA 290

$\frac{3}{16}$ "
I.D.



TWO-IN-ONE HOSE Single Braid

OXYGEN HOSE — GREEN
FUEL GAS HOSE — RED

Stock No.	Length	Weight (lbs.)	CONNECTIONS		FOR TORCHES
			To Regulators	To Torch	
RA911	6 ft.	1 $\frac{3}{4}$	R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 thread (all "B")	R13 (Oxy) R14 (Fuel) $\frac{3}{16}$ "-24 ("A")	Airline, NE120 NE140 & NE150
RA921	12 $\frac{1}{2}$ ft.	2 $\frac{1}{2}$		R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	Pipeliner, Pipewelders' Special, AW6 Lite-O-Matic
RA931	25 ft.	5	R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	Pipeliner, Pipewelders' Special, AW6 Lite-O-Matic
RL921	12 $\frac{1}{2}$ ft.	2 $\frac{3}{4}$		R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	Pipeliner, Pipewelders' Special, AW6 Lite-O-Matic
RL931	25 ft.	5		R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	Pipeliner, Pipewelders' Special, AW6 Lite-O-Matic

*Letters "A" and "B" refer to (IAA) International Acetylene Association Standard Hose Connections.

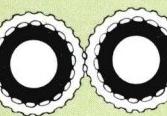
$\frac{3}{16}$ "
I.D.



LEADER HOSE 2-in-1 Single Braid

Stock No.	Length	Weight (lbs.)	CONNECTIONS		FOR TORCHES
			To Hose	To Torch	
RL912	6 ft.	2 $\frac{1}{4}$	R20 (Oxy)	$\frac{3}{16}$ "-18	Pipeliner, Pipewelders' Special, AW6 Lite-O-Matic
RL922	12 $\frac{1}{2}$ ft.	4 $\frac{1}{2}$	R21 (Fuel)	thread (all "B")	
				R13D (Oxy) R14D (Fuel) $\frac{3}{16}$ "-18 ("B")	

$\frac{1}{4}$ "
I.D.



TWO-IN-ONE HOSE Single Braid

Stock No.	Length	Weight (lbs.)	CONNECTIONS		FOR TORCHES
			To Regulators	To Torch	
RL1121	12 $\frac{1}{2}$ ft.	2 $\frac{3}{4}$	R11 (Oxy) R12 (Fuel) $\frac{3}{16}$ "-18 thread ("B")	R11 (Oxy)	Silver Star, Tuf-Tony, and Machine Torches
RL1131	25 ft.	6 $\frac{1}{2}$		R12 (Fuel)	
RL1141	50 ft.	12 $\frac{1}{2}$		$\frac{3}{16}$ "-18 thread ("B")	

$\frac{3}{16}$ "
(Single Braid)



$\frac{1}{4}$ "
(Single Braid)



SINGLE LINE HOSE

OXYGEN HOSE — GREEN
FUEL GAS HOSE — RED

Stock No.	Length	Gas	CONNECTIONS		FOR TORCHES
			To Regulators	To Torch	
RL111	6 ft.	Fuel	R14D ("B") $\frac{3}{16}$ "-18 LH	R14D ("B") $\frac{3}{16}$ "-18 LH	NE180 HANDI-HEET BODY
RL121	12 $\frac{1}{2}$ ft.	Fuel	R14D ("B") $\frac{3}{16}$ "-18 LH	R14D ("B") $\frac{3}{16}$ "-18 LH	
RL398	10 ft.	Fuel	R14D ("B") $\frac{3}{16}$ "-18 LH	R14D ("B") $\frac{3}{16}$ "-18 LH	
RL531	25 ft.	Fuel	R12 ("B") $\frac{3}{16}$ "-18 LH	R12 ("B") $\frac{3}{16}$ "-18 LH	SILVER STAR PIPELINER, PIPEWELDERS' SPECIAL, TUF TONY & MACHINE TORCHES
RL631	25 ft.	Oxygen	R11 ("B") $\frac{3}{16}$ "-18 RH	R11 ("B") $\frac{3}{16}$ "-18 RH	
RL541	50 ft.	Fuel	R12 ("B") $\frac{3}{16}$ "-18 LH	R12 ("B") $\frac{3}{16}$ "-18 LH	
RL641	50 ft.	Oxygen	R11 ("B") $\frac{3}{16}$ "-18 RH	R11 ("B") $\frac{3}{16}$ "-18 RH	

ACCESSORIES

EFFECT OF HOSE DIAMETER AND LENGTH ON FLOW AND PRESSURE AT TORCH

Hose Diameter	Hose Length	Cutting Tip Size	Reg. PSI Static	Reg. PSI Flowing	Inlet PSI Torch	PSI Drop In Hose	Flow CFH
$\frac{3}{16}$	50	3	50	47	37 $\frac{1}{2}$	9 $\frac{1}{2}$	169
$\frac{3}{16}$	100*	3	51	47	26	21	129
$\frac{3}{16}$	50	5	84 $\frac{1}{4}$	78	44	34	370
$\frac{3}{16}$	100*	5	83 $\frac{1}{2}$	78	22	56	215
$\frac{1}{4}$	50	5	86	78	68 $\frac{1}{2}$	9 $\frac{1}{2}$	540
$\frac{1}{4}$	100*	5	85	78	58 $\frac{1}{2}$	19 $\frac{1}{2}$	470
$\frac{1}{4}$	50	7	114	100	68	32	1140
$\frac{1}{4}$	100*	7	110	100	49	51	870
$\frac{1}{4}$	50	9	149 $\frac{1}{2}$	130	56 $\frac{1}{2}$	73 $\frac{1}{2}$	1110
$\frac{1}{4}$	100*	9	144	130	36 $\frac{1}{2}$	93 $\frac{1}{2}$	1290

* — Two 50 ft. lengths of hose connected together with standard hose unions

HOSE FITTINGS NWSA 290



HOSE CONNECTIONS (NUT AND TAILPIECE COMBINATION)

No.	Type	Tailpiece Type & No.	Nut Thread and Number	Hose Size—I.D.
R11	Oxygen	Barb—R7	$\frac{1}{16}$ "—18 R.H. R2	$\frac{1}{4}$ "
R13	Oxygen	Barb—R7A	$\frac{3}{8}$ "—24 R.H. R2A	$\frac{3}{16}$ "
R13D	Oxygen	Barb—R9	$\frac{3}{16}$ "—18 R.H. R2	$\frac{3}{16}$ "
R13E	Oxygen	Barb—R8A	$\frac{3}{8}$ "—24 R.H. R2A	$\frac{1}{8}$ "
R12	Fuel Gas	Barb—R7	$\frac{1}{16}$ "—18 L.H. R3	$\frac{1}{4}$ "
R14	Fuel Gas	Barb—R7A	$\frac{3}{8}$ "—24 L.H. R3A	$\frac{3}{16}$ "
R14D	Fuel Gas	Barb—R9	$\frac{3}{16}$ "—18 L.H. R3	$\frac{3}{16}$ "
R14E	Fuel Gas	Barb—R8A	$\frac{3}{8}$ "—24 L.H. R3A	$\frac{1}{8}$ "
R20	Oxygen	—	$\frac{1}{16}$ "—18 R.H.	$\frac{3}{16}$ "
R21	Fuel Gas	—	$\frac{1}{16}$ "—18 L.H.	$\frac{3}{16}$ "

HOSE SPLICERS (DOUBLE END BARB TYPE)

No.	Type	Hose Size—I.D.
R16	Barb	$\frac{1}{4}$ " & $\frac{3}{16}$ "
R16A	Barb	$\frac{3}{16}$ "

HOSE UNIONS (THREADED TYPE)

No.	Use With Gas:	Thread, Each End
R18	Oxygen	$\frac{1}{16}$ "—18 R.H.
R19	Fuel Gas	$\frac{3}{16}$ "—18 L.H.
R41	Oxygen	$\frac{3}{8}$ "—24 R.H.
R42	Fuel Gas	$\frac{3}{8}$ "—24 L.H.

HOSE ADAPTORS

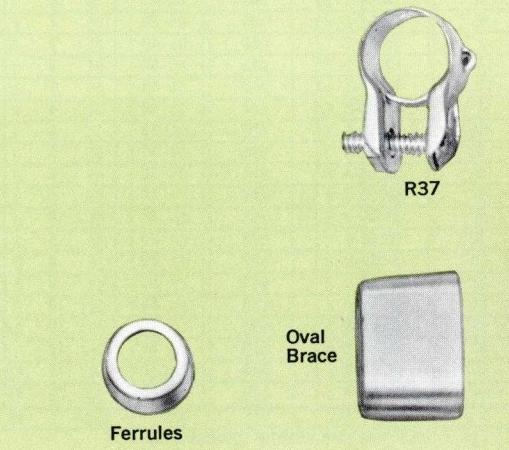
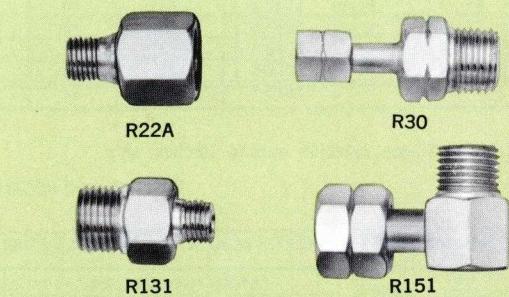
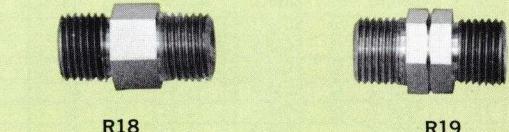
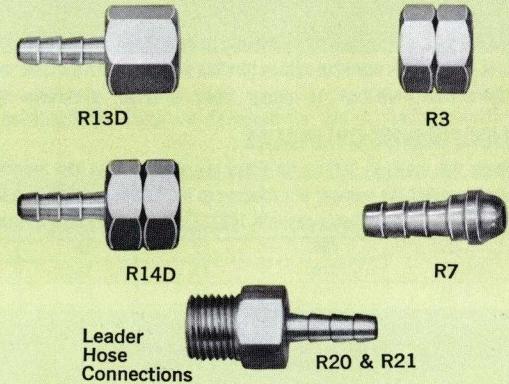
No.	Use With Gas:	Male End Thread	Female End Thread
R22A	Oxygen	$\frac{3}{8}$ "—24 R.H.	$\frac{1}{16}$ "—18 R.H.
R23A	Fuel Gas	$\frac{3}{8}$ "—24 L.H.	$\frac{1}{16}$ "—18 L.H.
R29	Oxygen	$\frac{1}{16}$ "—18 R.H.	$\frac{3}{8}$ "—24 R.H.
R30	Fuel Gas	$\frac{1}{16}$ "—18 L.H.	$\frac{3}{8}$ "—24 L.H.
R131	Oxygen	$\frac{1}{16}$ "—18 R.H. to $\frac{3}{8}$ "—24 R.H.	
R132	Fuel Gas	$\frac{1}{16}$ "—18 L.H. to $\frac{3}{8}$ "—24 L.H.	
R150 90° Angle	Oxygen	$\frac{1}{16}$ "—18 R.H.	$\frac{1}{16}$ "—18 R.H.
R151 90° Angle	Fuel Gas	$\frac{1}{16}$ "—18 L.H.	$\frac{1}{16}$ "—18 L.H.

HOSE CLAMPS

No.	Hose Size	Size
R34	$\frac{1}{4}$ " I.D.	$\frac{1}{4}$ "—4W
R35	$\frac{3}{16}$ " I.D.	$\frac{3}{16}$ "—3
R36	$\frac{1}{4}$ " and $\frac{3}{16}$ " I.D.	$\frac{3}{8}$ "—2W

BRASS HOSE FERRULES

No.	Inside Diameter	Length	Hose Type	Die No.
II	$\frac{3}{4}$ "	$\frac{1}{2}$ "	$\frac{1}{4}$ " 2-in-1 and Single	36
KK	$1\frac{1}{32}$ "	$\frac{1}{2}$ "	$\frac{3}{16}$ "	38
625	$1\frac{15}{32}$ "	$1\frac{15}{32}$ "	$\frac{3}{16}$ " 2-in-1 and Single	40
769	$2\frac{9}{32}$ "	$2\frac{7}{64}$ "	$\frac{3}{16}$ " Single	—
1 Oval Brace	$\frac{1}{2}$ "	$2\frac{3}{32}$ "	$\frac{3}{16}$ " 2-in-1	—
2 Oval Brace	$1\frac{15}{32}$ "	$2\frac{3}{32}$ "	$\frac{1}{4}$ " 2-in-1	—





MACHINE CUTTING

INFORMATION TABLES

NWSA 82

This information is intended as a guide to best quality cutting. The information was obtained from cuts made under average shop conditions and 5 second start time on new, clean steel. Three-hose machine cutting torches were used in a portable cutting machine with gases fed to the torches through 25 foot lengths of $\frac{1}{4}$ " I.D. hose. Footnotes show when other sizes of hose were used. If longer hose is used, pressures should be increased.

MANIFOLDING CYLINDERS

Where the required cutting tip flows are greater than the recommended rate of withdrawal from one cylinder (300 cu. ft. acetylene or 100 lb. propane cylinder) we have recommended the number of cylinders to be manifolded. Manifolding information is based on the following: PROPANE—cylinder $\frac{1}{3}$ full, temperature 60°F. 300 cu. ft. Acetylene Cylinder at 1/7 of cylinder capacity (43 C.F.H.). Consult your gas supplier for manifolding of other fuel gases.

"SC" ACETYLENE CUTTING TIPS—Heavy Duty

SC12 Series: MEDIUM PREHEAT For General Hand and Machine Cutting (6 and 8 preheats)

SC10 Series: MEDIUM PREHEAT For General Hand Cutting.

Metal Thickness	Tip Number	Tip Number	OXYGEN PRESSURE P.S.I.			Acetylene Pressure	CONSUMPTION C.F.H.			Cutting Speed	Kerf Width	DRILL SIZES			Recomm. No. of Cylinders (Sgl. or Manif.)
			Cutting Pressure		Preheat Pressure At Reg. (1)		Cutting Oxygen	Preheat Oxygen	Fuel			Cutting Jet	Preheat SC10 Series	Preheat SC12 Series	
			At Regulator	At Torch											
$\frac{1}{8}$ "	SC12-000	20	20	3	3	18	7	6.5	28	.035	.050	72	71	75	1
$\frac{3}{16}$ "	SC12-00	20	20	3	3	24	7	6.5	26	.050	.055	68	71	75	1
$\frac{1}{4}$ "	SC10-0	SC12-0	30	30	4	4	40	7.5	7	22	.055	62	70	74	1
$\frac{3}{8}$ "	SC10-0	SC12-0	35	35	4	4	50	7.5	7	20	.055	62	70	74	1
$\frac{1}{2}$ "	SC10-1	SC12-1	35	35	4	4	75	11	9.5	19	.080	56	68	71	1
$\frac{5}{8}$ "	SC10-1	SC12-1	40	40	4	4	85	11	9.5	17	.080	56	68	71	1
$\frac{3}{4}$ "	SC10-2	SC12-2	36	35	4	4	105	12	10.5	16	.095	54	65	70	1
1"	SC10-2	SC12-2	41	40	4	4	115	12	10.5	14	.095	54	65	70	1
$1\frac{1}{4}$ "	SC10-2	SC12-2	51	50	4	4	135	12	10.5	13	.095	54	65	70	1
$1\frac{1}{2}$ "	SC10-3	SC12-3	42	40	5	5	170	14	12	12	.100	51	65	68	1
2"	SC10-3	SC12-3	47	45	5	5	180	14	12	10	.100	51	65	68	1
$2\frac{1}{2}$ "	SC10-4	SC12-4	38	35	5	5	240	15	13	9	.125	45	60	62	1
3"	SC10-4	SC12-4	44	40	5	5	265	15	13	8	.125	45	60	62	1
4"	SC10-4	SC12-4	54	50	5	5	315	16	14	7	.125	45	60	62	1
5"		SC12-5	56	50	6	6	420	30	26	7	.150	41	60	57	1
6"		SC12-5	67	60	6	6	485	30	26	6	.150	41	60	57	1
8"		SC12-5	78	70	6	6	550	30	26	5.5	.150	41	60	57	1
10"		SC12-6	83	70	6	6	750	32	28	5	.203	32		57	1
12"		SC12-6	125	90	6	6	975	32	28	4.5	.230	32		57	1
14"		SC12-7	100	82	6	7	1250	34	30	4	.250	28		54	1

(1) For 3-hose machine cutting torches only.

SC56 Series: HEAVY PREHEAT. For Hand and Machine Cutting with Acetylene.

Metal Thickness	Tip Number	OXYGEN PRESSURE P.S.I.			Acetylene Pressure	CONSUMPTION C.F.H.			Cutting Speed	Kerf Width	DRILL SIZES			Recomm. No. of Cylinders (Sgl. or Manif.)
		CUTTING PRESSURE		Preheat Pressure At Regulator		Cutting Oxygen	Preheat Oxygen	Acet.			Cutting Jet	Preheat		
		At Regulator	At Torch											
$\frac{1}{2}$ "	SC56-1	35	35	3	3	75	33	30	19	.080	56	59		1
$\frac{5}{8}$ "	SC56-1	40	40	3	3	85	33	30	17	.080	56	59		1
$\frac{3}{4}$ "	SC56-2	36	35	3	3	105	33	30	16	.095	54	59		1
1"	SC56-2	41	40	3	3	115	33	30	14	.095	54	59		1
$1\frac{1}{4}$ "	SC56-2	51	50	3	3	135	33	30	13	.095	54	59		1
$1\frac{1}{2}$ "	SC56-3	42	40	4	4	170	43	39	12	.100	51	56		1
2"	SC56-3	47	45	4	4	180	50	45	10	.100	51	56		1
$2\frac{1}{2}$ "	SC56-4	38	35	4	4	240	50	45	9	.125	45	54		1
3"	SC56-4	44	40	4	4	265	50	45	8	.125	45	54		1
4"	SC56-4	54	50	5	5	315	57	52	7	.125	45	54		2
5"	SC56-5	56	50	5	5	420	57	52	7	.150	41	54		2
6"	SC56-5	67	60	5	5	485	66	60	6	.150	41	54		2
8"	SC56-5	78	70	6	6	550	72	65	5.5	.150	41	54		2
10"	SC56-6	83	70	8	8	750	83	75	5	.203	32	54		2
12"	SC56-6	125	90	9	9	975	94	85	4.5	.230	32	54		2
14"	SC56-7	100	85	10	8	1250	110	100	4	.250	28	54		3
16"	SC56-8	95	70	10	9	1500	120	110	3.5	.300	17	54		3
18"	SC56-8	115	85	12	11	1800	130	120	3.5	.340	17	54		3
20"	SC56-9	110	70	14	12	2150	145	130	3	.350	3	54		3
24"	SC56-9	130	85	15	13	2600	175	160	2.5	.360	3	54		4

(1) For 3-hose machine cutting torches only.

The figures shown here were gathered under ideal machine cutting conditions, using clean steel. Pressures shown are for 25 feet (or less) of $\frac{3}{8}$ " I.D. hose. If longer hose is used, pressure should be increased. Use $\frac{1}{2}$ " I.D. hose when hose length is over 100 feet.

"SC" PROPANE, NATURAL GAS CUTTING TIPS—Heavy Duty

SC21A SERIES: For HIGH SPEED Machine Cutting.

These tips give about 20% more speed than comparable tips . . . with no increase in oxygen consumption. They are designed for use in machine cutting torches only. Tips have 12 pre-heat slots.

Metal Thickness	Tip Number	Cutting Speed I.P.M.	OXYGEN PRESSURE		Propane P.S.I.	CONSUMPTION (CFH)			Kerf	Tip Cleaners Cutting Jet
			Cut. Oxy. At Reg.	Preheat P.S.I.		Cutting Oxygen	Preheat Oxygen	Propane		
1/4"	SC21A-1	26	85	10	8	76	47	13	.080	TC-1
5/8"	SC21A-1	24	85	10	8	76	47	13	.080	TC100
1/2"	SC21A-2	22	100	10	8	116	53	13	.085	TC-2
3/4"	SC21A-2	20	110	10	8	126	53	13	.090	TC100
1"	SC21A-2	18	115	10	8	132	53	13	.095	
1 1/4"	SC21A-3	17	95	10	8	169	53	13	.100	TC-3
1 1/2"	SC21A-3	15	115	10	8	202	53	13	.105	TC100
2"	SC21A-4	13	100	10	8	195	53	13	.095	TC-4
2 1/2"	SC21A-4	12	110	10	8	210	53	13	.110	TC100
3"	SC21A-5	10	110	10	8	247	53	13	.115	TC-5
4"	SC21A-5	9	115	10	8	257	60	16	.115	TC100

SC46 SERIES: For Cutting Greasy or Painted Metal. One Piece Propane, Natural Gas Tip.

Metal Thickness	Tip Number	CUTTING OXYGEN			WHEN USING PROPANE				WHEN USING NATURAL GAS				Kerf	Speed I.P.M.	DRILL SIZE			
		P.S.I. At Reg.	P.S.I. At Torch	Flow CFH	Preheat PSI		Preheat CFH		Preheat PSI		Preheat CFH				Cutting	Pr-Ht.		
					Oxy.	Fuel	Oxy.	Fuel	Oxy.	Fuel	Oxy.	Fuel						
1/2"	SC46-1	35	35	75	20	10	70	15	20	10	70	41	.080	19	56	56		
5/8"	SC46-1	40	40	85	20	10	70	15	20	10	70	41	.080	17	56	56		
3/4"	SC46-2	36	35	105	20	10	70	15	20	10	70	41	.095	16	54	56		
1"	SC46-2	41	40	115	20	10	70	15	20	10	70	41	.095	14	54	56		
1 1/4"	SC46-2	51	50	135	20	10	70	15	20	10	70	41	.095	13	54	56		
1 1/2"	SC46-3	42	40	170	20	10	70	15	20	10	70	41	.100	12	51	56		
2"	SC46-3	47	45	180	20	10	70	15	20	10	70	41	.125	10	51	56		
2 1/2"	SC46-4	38	35	240	20	10	70	15	20	10	70	41	.125	9	45	56		
3"	SC46-4	44	40	265	20	10	70	15	20	10	70	41	.125	8	45	56		
4"	SC46-4	54	50	315	20	10	70	15	20	10	70	41	.150	7	45	56		
5"	SC46-5	56	50	420	20	10	105	22	20	10	90	52	.150	7	41	54		
6"	SC46-5	67	60	485	20	10	105	22	20	10	90	52	.150	6	41	54		
8"	SC46-5	78	70	550	20	10	105	22	20	10	90	52	.150	5	41	54		
10"	SC46-6	83	70	750	20	10	105	22	20	10	90	52	.200	5	32	54		
12"	SC46-6	125	90	975	20	10	105	22	20	10	90	52	.230	4.5	32	54		

SC50 SERIES: For General Hand and Machine Cutting. Medium preheat on SC50-00 and SC50-0. Heavy preheat on SC50-1 through SC50-9.

Metal Thickness	Tip Number	CUTTING OXYGEN			WHEN USING PROPANE AND PROPANE BASED GASES				WHEN USING NATURAL GAS				Kerf	Speed I.P.M.	DRILL SIZE* Cutting	Recomm. No. of Fuel Gas Cylinders (Sgl. or Manif.)				
		P.S.I. At Reg.	P.S.I. At Torch	Flow CFH	Preheat PSI		Preheat CFH		Preheat PSI		Preheat CFH									
					Oxy.	Fuel	Oxy.	Fuel	Oxy.	Fuel	Oxy.	Fuel								
3/16"	SC50-00	20	20	24	6	5	47	13	6	5	58	36	.050	26	68	1				
1/4"	SC50-0	30	30	40	6	5	47	13	6	5	62	38	.055	22	62	1				
5/8"	SC50-0	35	35	50	6	5	47	13	6	5	62	38	.055	20	62	1				
1/2"	SC50-1	35	35	75	8	6	70	15	8	6	70	40	.080	19	56	1				
5/8"	SC50-1	40	40	85	8	6	70	15	8	6	70	40	.080	17	56	1				
3/4"	SC50-2	36	35	105	8	6	70	15	8	6	70	40	.080	16	54	1				
1"	SC50-2	41	40	115	8	6	70	15	8	6	70	40	.095	14	54	1				
1 1/4"	SC50-2	51	50	135	8	6	75	16	8	6	70	40	.095	13	54	1				
1 1/2"	SC50-3	42	40	170	8	6	75	16	8	6	70	40	.095	12	51	1				
2"	SC50-3	47	45	180	8	6	75	16	8	6	70	40	.100	10	51	1				
2 1/2"	SC50-4	38	35	240	8	6	75	16	8	6	75	45	.125	9	45	1				
3"	SC50-4	44	40	265	8	6	75	16	8	6	75	45	.125	8	45	1				
4"	SC50-4	54	50	315	8	6	80	17	8	6	75	45	.125	7	45	1				
5"	SC50-5	56	50	420	8	6	80	17	8	6	82	50	.150	7	41	1				
6"	SC50-5	67	60	485	8	6	80	17	8	6	82	50	.150	6	41	1				
8"	SC50-5	78	70	550	10	7	90	20	8	6	82	50	.150	5	41	1				
10"	SC50-6	83	70	750	40	8	230	50	10	8	120	75	.203	5	32	2				
12"	SC50-6	125	90	975	40	12	280	60	15	12	165	100	.230	4.5	32	2				
14"	SC50-7	100	85	1250	60	20	330	62	20	16	200	120	.250	4.0	28	2				
16"	SC50-8	95	70	1500	60	18	375	80	20	18	220	135	.300	3.5	17	2				
18"	SC50-8	115	85	1800	60	20	400	85	25	23	250	150	.340	3.5	17	2				
20"	SC50-9	110	70	2150	60	23	420	90	25	23	250	150	.350	3.0	3	2				

Preheat oxygen pressure settings apply only when a 3-hose torch is used.

Regulator pressures are for 50 feet of 3/8" I.D. hose. If longer hose or smaller I.D. hose is used, raise regulator pressures. If more than 100 feet of hose is required, use 1/2" I.D. hose for additional length.



CUTTING TIP DATA

NWSA 82

"SC" FLAMEX® PROPANE CUTTING TIPS (and propane base gases)

SC40 SERIES: MEDIUM PREHEAT. For Hand and Machine Cutting.

Metal Thickness	Tip Number	CUTTING OXYGEN			WHEN USING FLAMEX® PROPANE				Kerf Inches	Speed I.P.M.	Cutting Jet Drill Size
		P.S.I. at Reg.	P.S.I. at Torch (2)	Cutting Oxy. Flow CFH	Preheat P.S.I. Oxy.	Fuel	Preheat Flow CFH Oxy.	Fuel			
1/4"	SC40-0	30	30	40	8	5	38-57	8-12	.055	22	#62
3/8"	SC40-0	35	35	50	8	5	38-57	8-12	.055	20	#62
1/2"	SC40-1	35	35	75	8	5	38-57	8-12	.080	19	#56
5/8"	SC40-1	40	40	85	8	5	38-57	8-12	.080	17	#56
3/4"	SC40-2	36	35	105	8	5	38-57	8-12	.095	16	#54
1"	SC40-2	41	40	115	8	5	38-57	8-12	.095	14	#54
1 1/4"	SC40-2	51	50	135	8	5	38-57	8-12	.095	13	#54
1 1/2"	SC40-3	42	40	170	8	5	38-57	8-12	.100	12	#51
2"	SC40-3	47	45	180	8	5	38-57	8-12	.100	10	#51
2 1/2"	SC40-4	38	35	240	12	7	65-86	15-20	.125	9	#45
3"	SC40-4	44	40	265	12	7	65-86	15-20	.125	8	#45
4"	SC40-4	54	50	315	12	7	65-86	15-20	.125	7	#45
5"	SC40-5	56	50	420	12	7	65-86	15-20	.150	7	#41
6"	SC40-5	67	60	485	12	7	65-86	15-20	.150	6	#41
8"	SC40-5	78	70	550	12	7	65-86	15-20	.150	5	#41
10"	SC40-6	83	70	750	12	7	65-86	15-20	.210	5	#32
12"	SC40-6	125	90	975	12	7	65-86	15-20	.230	4.5	#32

1. All pressure values listed are for flowing pressure settings.

2. Values are for 3-hose machine cutting torches only.

3. Preheat oxygen pressure shall be same as cutting oxygen pressure when using 2-hose machine or hand torch.

"SC" HPG® PROPYLENE CUTTING TIPS (and propane base gases)

SC60 SERIES: MEDIUM PREHEAT. For Hand and Machine Cutting.

Metal Thickness	Tip Number	CUTTING OXYGEN			OXYGEN & FUEL GASES—PREHEAT				Kerf Inches	Speed I.P.M.	Cutting Jet Drill Size
		P.S.I. at Reg.	P.S.I. at Torch (2)	Cutting Oxy. Flow CFH	Preheat P.S.I. Oxy.	Fuel	Preheat Flow CFH Oxy.	Fuel			
1/4"	SC60-0	30	30	40	7	5	38	9	.055	22	#62
3/8"	SC60-0	35	35	50	7	5	38	9	.055	20	#62
1/2"	SC60-1	35	35	75	7	5	38	9	.080	19	#56
5/8"	SC60-1	40	40	85	7	5	38	9	.080	17	#56
3/4"	SC60-2	36	35	105	7	5	38	9	.095	16	#54
1"	SC60-2	41	40	115	7	5	38	9	.095	14	#54
1 1/4"	SC60-2	51	50	135	7	5	38	9	.095	13	#54
1 1/2"	SC60-3	42	40	170	7	5	38	9	.100	12	#51
2"	SC60-3	47	45	180	7	5	38	9	.100	10	#51
2 1/2"	SC60-4	38	35	240	12	7	58	15	.125	9	#45
3"	SC60-4	44	40	265	12	7	58	15	.125	8	#45
4"	SC60-4	54	50	315	12	7	58	15	.125	7	#45
5"	SC60-5	56	50	420	12	7	58	15	.150	7	#41
6"	SC60-5	67	60	485	12	7	58	15	.150	6	#41
8"	SC60-5	78	70	550	12	7	58	15	.150	5	#41
10"	SC60-6	83	70	750	12	7	58	15	.210	5	#32
12"	SC60-6	125	90	975	12	7	58	15	.230	4.5	#32

1. All pressure values are for flowing pressure settings.

2. Values are for 3-hose machine cutting torches only.

3. Preheat oxygen pressure shall be same as cutting oxygen pressure when using 2-hose machine or hand torch.

CUTTING TIP DATA

NWSA 82



MAPP®, LIQUID AIR FUEL-GAS CUTTING TIPS

SC56 SERIES CUTTING TIPS. For use with Mapp® gas or Liquid Air Fuel Gas.

Metal Thickness	Tip No.	Oxygen Pressure P.S.I.				Mapp® Gas Pressure	Consumption CFH			Cutting Speed	Kerf Width	Drill Size	
		Cutting Pressure		Preheat Pressure Regulator	Preheat Openings		Cutting Oxygen	Preheat Oxygen	Mapp®			Cutting Jet	Preheat
		Regulator	Torch (I)										
3/16"	SC56-00	20	20	3	8	3	24	22.5	6.5	26	.050	68	68
1/4"	SC56-0	30	30	4	8	4	40	24.5	7.0	22	.055	62	68
5/8"	SC56-0	35	35	4	8	4	50	24.5	7.0	20	.055	62	68
1/2"	SC56-1	35	35	4	8	4	75	31.5	9.0	19	.080	56	65
5/8"	SC56-1	40	40	4	8	4	85	31.5	9.0	17	.080	56	65
3/4"	SC56-2	36	35	4	8	4	105	35.0	10.0	16	.095	54	60
1"	SC56-2	41	40	4	8	4	115	38.5	11.0	14	.095	54	60
1 1/4"	SC56-2	51	50	4	8	4	135	38.5	11.0	13	.095	54	60
1 1/2"	SC56-3	42	40	5	8	5	170	42.0	12.0	12	.100	51	57
2"	SC56-3	47	45	5	8	5	180	45.5	13.0	10	.100	51	57
2 1/2"	SC56-4	38	35	5	8	5	240	52.5	15.0	9	.125	45	54
3"	SC56-4	44	40	5	8	5	265	52.5	15.0	8	.125	45	54
4"	SC56-4	54	50	5	8	5	315	56.0	16.0	7	.125	45	54
5"	SC56-5	56	50	6	8	6	420	56.0	16.0	7	.150	41	54
6"	SC56-5	67	60	6	8	6	485	48.0	16.0	6	.150	41	54
8"	SC56-5	78	70	6	8	6	550	57.0	19.0	5.5	.150	41	54
10"	SC56-6	83	70	6	8	6	750	66.0	21.0	5.0	.203	32	54
12"	SC56-6	125	90	6	8	6	975	66.0	21.0	4.5	.230	32	54
14"	SC56-7	100	85	15	12	10	1250	90	30	4	.250	28	54
16"	SC56-8	95	70	20	12	15	1500	105	35	3.5	.300	17	54
18"	SC56-8	115	85	20	12	15	1800	105	35	3.5	.340	17	54
20"	SC56-9	110	70	20	12	15	2250	105	35	3	.350	3	54
24"	SC56-9	130	85	20	12	15	2600	105	35	2.5	.360	3	54

(1) Pressures shown are for 3 hose machine cutting torch only using 25 feet or less of 1/4 inch I.D. hose.

SC90 SERIES: MEDIUM PREHEAT. For Hand and Machine Cutting with Mapp® or Liquid Air Fuel-Gas.

Metal Thickness	Tip Number	CUTTING OXYGEN			OXYGEN & MAPP® PREHEAT				Kerf Inches	Speed I.P.M.	Cutting Jet Drill Size
		P.S.I. at Reg.	P.S.I. at Torch (2)	Cutting Oxy. Flow CFH	Preheat P.S.I. OXY.	Preheat P.S.I. MAPP	Preheat Flow CFH OXY.	Preheat Flow CFH MAPP			
1/4"	SC90-0	30	30	40	7	5	34	9	.055	22	#62
5/8"	SC90-0	35	35	50	7	5	34	9	.055	20	#62
1/2"	SC90-1	35	35	75	7	5	34	9	.080	19	#56
5/8"	SC90-1	40	40	85	7	5	34	9	.080	17	#56
3/4"	SC90-2	36	35	105	7	5	34	9	.095	16	#54
1"	SC90-2	41	40	115	7	5	34	9	.095	14	#54
1 1/4"	SC90-2	51	50	135	7	5	34	9	.095	13	#54
1 1/2"	SC90-3	42	40	170	7	5	34	9	.100	12	#51
2"	SC90-3	47	45	180	7	5	34	9	.100	10	#51
2 1/2"	SC90-4	38	35	240	12	7	58	15	.125	9	#45
3"	SC90-4	44	40	265	12	7	58	15	.125	8	#45
4"	SC90-4	54	50	315	12	7	58	15	.125	7	#45
5"	SC90-5	56	50	420	12	7	58	15	.150	7	#41
6"	SC90-5	67	60	485	12	7	58	15	.150	6	#41
8"	SC90-5	78	70	550	12	7	58	15	.150	5	#41
10"	SC90-6	83	70	750	12	7	58	15	.210	5	#32
12"	SC90-6	125	90	975	12	7	58	15	.230	4.5	#32

1. All pressure values listed are for flowing pressure settings.

2. Values are for 3-hose machine cutting torches only.

3. Preheat oxygen pressure shall be same as cutting oxygen pressure when using 2-hose machine or hand torch.

MC90 Series: Use in Pipeliner or Airline Cutting Assemblies

Metal Thickness	Tip Number	OXYGEN			MAPP®			Kerf Inches	Cutting Jet Drill Size
		P.S.I. at Reg.	Cutting Oxy. Flow CFH	Oxy. Preheat Flow CFH	P.S.I. at Reg.	Preheat CFH			
1/4"	MC90-0	35*	40	26	7	7	.055	#62	
5/8"	MC90-0	40*	46	26	7	7	.055	#62	
1/2"	MC90-1	45*	75	26	7	7	.080	#56	
5/8"	MC90-1	50*	81	26	7	7	.080	#56	
3/4"	MC90-2	50*	107	26	7	7	.095	#54	
1"	MC90-2	55*	118	26	7	7	.095	#54	
1 1/4"	MC90-2	60*	133	26	7	7	.095	#54	
1 1/2"	MC90-3	55*	170	42	10	11	.100	#51	
2"	MC90-3	60*	181	42	10	11	.100	#51	
2 1/2"	MC90-4	65*	249	42	10	11	.125	#45	
3"	MC90-4	70*	267	42	10	11	.125	#45	

1. All tips have 18 slots.

2. All pressure values listed are for flowing pressure settings.

*Increase pressures 10-15 P.S.I. when using Airline AC305 or AC309 cutting assemblies.



CUTTING TIP DATA

NWSA 82

"MC" ACETYLENE CUTTING TIPS

MC12 Series: Use in Pipeliner or Airline Cutting Assemblies.

Metal Thickness	Tip Size 6 Preheat	Oxygen P.S.I.	Acetylene P.S.I.	APPROX. CONSUMPTION (CFH)		Cutting Jet	DRILL SIZES PREHEATS MC12
				Oxygen	Acetylene		
1/8"-3/16"	MC12-00	20	3	30	6.5	68	75
1/4"	MC12-0	35*	3	50	6.5	62	75
5/16"	MC12-0	40*	3	60	6.5	62	75
1/2"	MC12-1	45*	4	85	7	56	74
5/8"	MC12-1	50*	4	95	7	56	74
3/4"	MC12-2	50*	4	120	9.5	54	71
1"	MC12-2	55*	4	130	9.5	54	71
1 1/2"	MC12-3	55*	4	185	10.5	51	70
2"	MC12-3	60*	4	195	10.5	51	70
2 1/2"	MC12-4	65*	4	255	10.5	45	70
3"	MC12-4	70*	4	280	13	45	70
4"	MC12-4	65	5	335	15	45	70
5"	MC12-5	80	5	445	15	41	70
6"	MC12-5	90	5	500	15	41	70

Pressures shown are for 25 feet (or less) of 3/16" I.D. hose. If longer hose is used, pressures should be increased.

*Increase pressures 10-15 P.S.I. when using Airline AC305 or AC309 cutting assemblies.

"MC" FLAMEX® PROPANE CUTTING TIP DATA (and propane base gases)

MC 40 Series: Use in Pipeliner or Airline Cutting Assemblies.

Metal Thickness	Tip Number	OXYGEN			FLAMEX® Propane		Kerf Inches	Cutting Jet Drill Size
		P.S.I. at Reg.	Cutting Oxy. Flow CFH	Oxy. Preheat Flow CFH	P.S.I. at Reg.	Preheat CFH		
1/4"	MC40-0	35*	40	35-51	7-10	7-11	.055	#62
5/16"	MC40-0	40*	46	35-51	7-10	7-11	.055	#62
1/2"	MC40-1	45*	75	35-51	7-10	7-11	.080	#56
5/8"	MC40-1	50*	81	35-51	7-10	7-11	.080	#56
3/4"	MC40-2	50*	107	35-51	7-10	7-11	.095	#54
1"	MC40-2	55*	118	35-51	7-10	7-11	.095	#54
1 1/4"	MC40-2	60*	133	35-51	7-10	7-11	.095	#54
1 1/2"	MC40-3	55*	170	35-51	7-10	7-11	.100	#51
2"	MC40-3	60*	181	35-51	7-10	7-11	.100	#51
2 1/2"	MC40-4	65*	249	35-51	7-10	7-11	.125	#45
3"	MC40-4	70*	267	35-51	7-10	7-11	.125	#45

1. All tips have 18 slots.

2. All pressure values listed are for flowing pressure settings.

*Increase pressure 10-15 P.S.I. when using Airline AC305 or AC309 cutting assemblies.

"MC" HPG®—PROPYLENE CUTTING TIPS (and propylene base gases)

MC60 Series: Use in Pipeliner or Airline Cutting Assemblies

Metal Thickness	Tip Number	OXYGEN		FUEL—PROPYLENE GASES			Kerf Width Inches	Cutting Jet Drill Size
		P.S.I. at Reg.	Cutting Oxy. Flow CFH	P.S.I. at Reg.	Propylene Preheat Flow CFH	Oxy. Preheat Flow CFH		
1/4"	MC60-0	35*	40	7	7	26	.055	#62
5/16"	MC60-0	40*	46	7	7	26	.055	#62
1/2"	MC60-1	45*	75	7	7	26	.080	#56
5/8"	MC60-1	50*	81	7	7	26	.080	#56
3/4"	MC60-2	50*	107	7	7	26	.095	#54
1"	MC60-2	55*	118	7	7	26	.095	#54
1 1/4"	MC60-2	60*	133	7	7	26	.095	#54
1 1/2"	MC60-3	55*	170	10	11	42	.100	#51
2"	MC60-3	60*	181	10	11	42	.100	#51
2 1/2"	MC60-4	65*	249	10	11	42	.125	#45
3"	MC60-4	70*	267	10	11	42	.125	#45

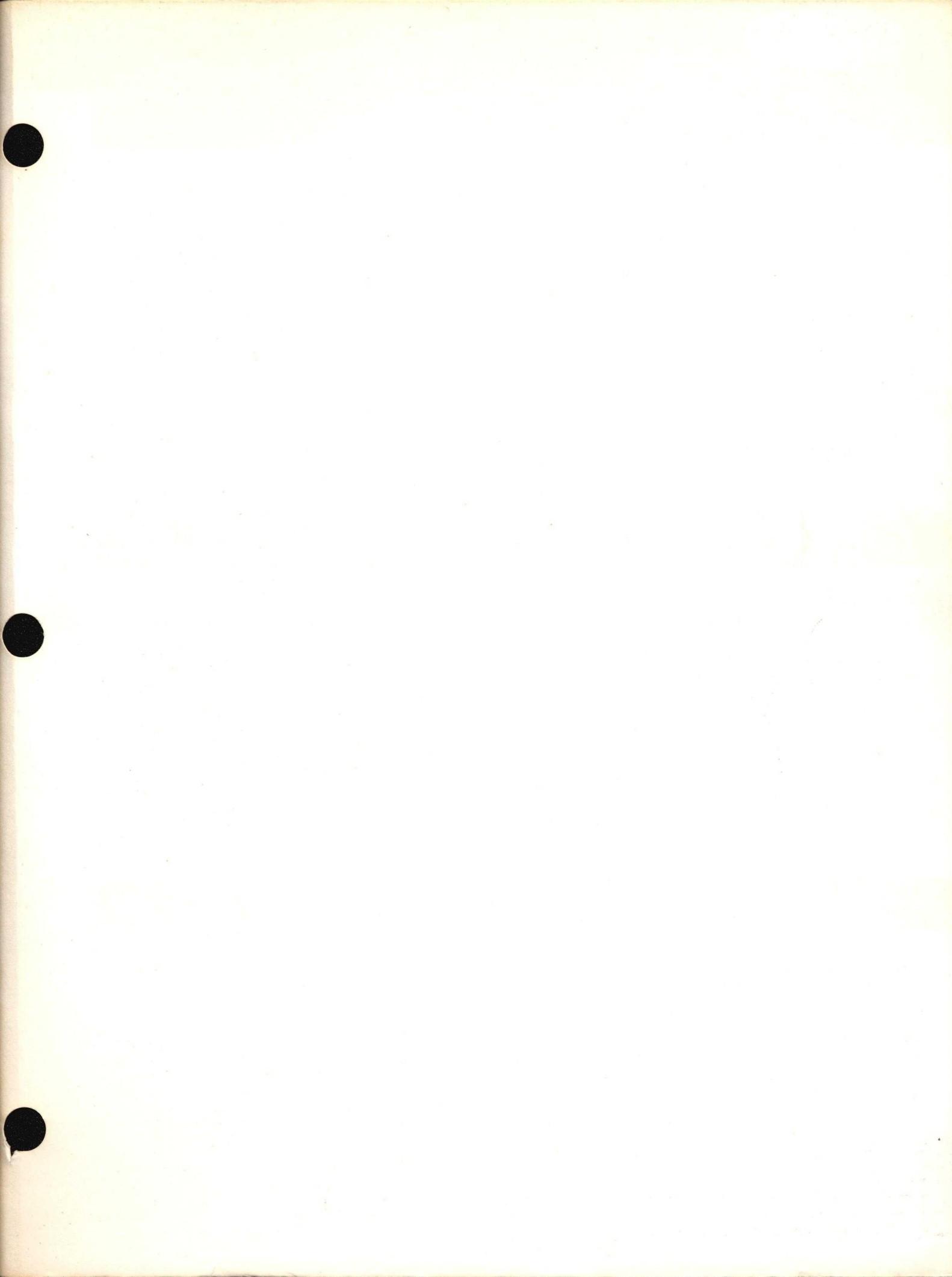
1. All tips have 18 slots.

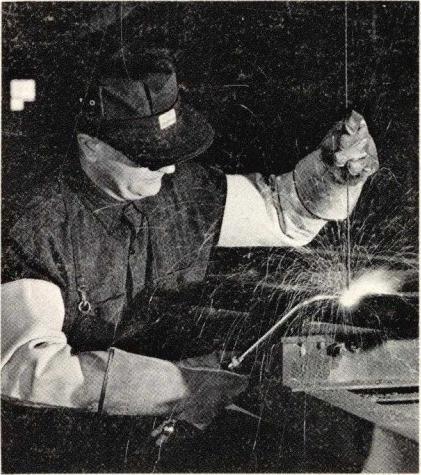
*Increase pressures 10-15 P.S.I. when using Airline AC305 or AC309 cutting assemblies.

2. All pressure values listed are for flowing pressure settings.

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